

AEMPS

**Advances in Economics, Management and
Political Sciences**

Proceedings of the 3rd International Conference
on Business and Policy Studies

Cardiff, UK

February 27 – March 6, 2024

EWA Publishing

Volume 68

Editor
Arman Eshraghi
Cardiff Business School

ISSN: 2754-1169
ISSN: 2754-1177 (eBook)

ISBN: 978-1-83558-267-1
ISBN: 978-1-83558-268-8 (eBook)

Publication of record for individual papers is online:
<https://www.ewadirect.com/proceedings/aemps/home/index>

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This imprint is published by **EWA Publishing**
Address: John Eccles House, Robert Robinson Avenue, Oxford, England, OX4 4GP
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Preface

The 3rd International Conference on Business and Policy Studies (CONF-BPS 2024) is an annual conference focusing on research areas including applied economics, enterprise management, and public administration. It aims to establish a broad and interdisciplinary platform for experts, researchers, and students worldwide to present, exchange, and discuss the latest advance and development in applied economics, enterprise management, and public administration.

This volume contains the papers of the 3rd International Conference on Business and Policy Studies (CONF-BPS 2024). Each of these papers has gained a comprehensive review by the editorial team and professional reviewers. Each paper has been examined and evaluated for its theme, structure, method, content, language, and format.

Cooperating with prestigious universities, CONF-BPS 2024 organized five workshops in Cardiff, Aberdeen, Galati and Beijing. Prof. Arman Eshraghi chaired the workshop “Emerging Financial Crisis and Corporate Exposure”, which was held at Cardiff Business School. Dr. Naser Makarem chaired the workshop “Determinants of Audit Quality in a Patriarchal Setting”, which was held at University of Aberdeen. Professor Dr. Habil. Florian Marcel Nuță chaired the workshop “The Economic and Social Impact of Implementing EsGs for Climate-Neutral Universities”, which was held at Danubius University from Galați. Prof. Xuezheng Qin chaired the workshop “The 2nd International Conference on Applied Economics and Policy Studies”, which was held at Peking University. Dr. Li Chai chaired the workshop “Environmental Economics and Sustainable Development”, which was held at China Agricultural University.

Besides these workshops, CONF-BPS 2024 also held an online session. Eminent professors from top universities worldwide were invited to deliver keynote speeches in this online session, including Dr. Fawaz Khaled from Oxford Brookes University, Dr. Naser Makarem from University of Aberdeen, Dr. Guanming He from Durham University, etc. They have given keynote speeches on related topics of applied economics, enterprise management, and public administration.

On behalf of the committee, we would like to give sincere gratitude to all authors and speakers who have made their contributions to CONF-BPS 2024, editors and reviewers who have guaranteed the quality of papers with their expertise, and the committee members who have devoted themselves to the success of CONF-BPS 2024.

Dr. Arman Eshraghi
General Chair of Conference Committee

Workshop

Workshop – Cardiff: Emerging Financial Crisis and Corporate Exposure



February 27th, 2024 (GMT)

Finance and Chair of Finance and Investment, Cardiff Business School

Workshop Chair: Prof. Arman Eshraghi, Professor in Cardiff Business School

Workshop – Aberdeen: Determinants of Audit Quality in a Patriarchal Setting



February 21st, 2024 (GMT)

Department of Accountancy and Finance, University of Aberdeen

Workshop Chair: Dr. Naser Makarem, Assistant professor in University of Aberdeen

Workshop – Galati: The Economic and Social Impact of Implementing EsGs for Climate-Neutral Universities



February 15th, 2024 (GMT+2)

Department of Finance and Business Administration, Danubius University from Galați

Workshop Chair: Professor Dr. Habil. Florian Marcel Nuță, Professor Dr. Habil. in Danubius University from Galați

Workshop – Beijing: The 2nd International Conference on Applied Economics and Policy Studies



January 14th, 2024 (GMT+8)

Peking University Research Center for Market Economy, Peking University

Workshop Chair: Prof. Xuezheng Qin, Professor in Peking University

Workshop – Beijing: Environmental Economics and Sustainable Development



February 15th, 2024 (GMT+2)

International College Beijing, China Agricultural University

Workshop Chair: Dr. Li Chai, Associate Professor in China Agricultural University

The 3rd International Conference on Business and Policy Studies

CONF-BPS 2024

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The Benign Brand Operation of Professional Sports Leagues: A Case Study on Real Madrid

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Abstract: Real Madrid's profitability continued to grow during the epidemic period, making it a rare club in Europe to still be profitable during COVID-19. Based on this event, the purpose of this exploration was to explore what kind of management style and business strategy Real Madrid used during the epidemic period of 2019–2022. Using Real Madrid as a case study, this paper analyzed the information sources applied to Real Madrid's revenues in different aspects as well as Real Madrid's business formula. The first reason was Real Madrid's market management philosophy, and the corresponding recommendation was to increase fan loyalty by strengthening the development of the players and improving the rights of the fans, along with digital marketing tools. The second reason was Real Madrid's excellent youth training system, and the corresponding recommendation was to make more use of modern data analysis systems to track the development of each player. The third reason was Real Madrid's team culture, and the recommendation was to utilize the celebrity effect to promote the team's culture. The main objective of such an exploration was to help national soccer clubs learn from Real Madrid's successful management model to improve their profitability.

Keywords: Real Madrid, market management, youth training system, team culture

1. Introduction

COVID-19 broke out all over the planet in 2019. The outbreak of the epidemic had a significant impact on all industries. For the home economy, when the outbreak was concentrated in the first quarter of 2020, the national economy abruptly froze and even declined [1]. The continuation of COVID-19 has had a significant impact on the global economy [2]. Globally, many walks of life are suffering from the economic slump, but despite this, Real Madrid Club fared admirably during the epidemic. According to the study, Real Madrid's fiscal operational income of 722 million euros climbed by 68.5 million euros, or 10%, as of June 30, 2022, and achieved a net profit of 13 million euros, making it profitable for three consecutive years [3]. In the three years since the outbreak, Real Madrid has seen not just economic growth but also a huge number of club players afflicted with the new coronavirus. Real Madrid players have rarely done this while improving their results in all tournaments.

Although many scholars have previously studied Real Madrid FC, there are some gaps in academic exploration because Real Madrid's situation during the 2019–2022 epidemic has been discussed and explored by scholars who have not yet been able to take a managerial perspective in this area. As a result, this essay will look into what kind of management style and business strategy Real Madrid employed during the epidemic years of 2019–2022, in order to retain such a high level of success and to be the only team that remained profitable during the epidemic. During the pandemic, practically all clubs, whether domestic or foreign, are losing money. Players and management are infected with the virus, but the magic is that even though the entire financial report reveals that the value of profit is lower than before the pandemic, Real Madrid is still profitable. According to the domestic scenario, the analysis of Real Madrid's management mode and business model during the epidemic will be incorporated into the management mode and business model of domestic club operations to help domestic clubs quickly recover after the epidemic. The importance of studying Real Madrid Club's management mode and business strategy during the epidemic is to make some suggestions in line with the domestic market by studying its successful experience in order to help some domestic clubs and brands recover quickly after the epidemic.

In order to solve the issues, this paper will take Real Madrid as a case study, combining the relevant data and information on management strategy and policy for the period of 2019–2022, to analyze the reasons for its success and argue its relevant impacts. Based on its success during the epidemic and in light of the current situation of Real Madrid and the relevant market conditions, it will give reasonable suggestions and advice on what to do next. What should be done to maintain the glory and success of the club, and how can its success inspire domestic clubs and brands to develop better and better?

2. Case Description

Spanish professional football teams used to be unable to compete with English professional football clubs, but their achievements in commercial activities such as advertising and product sales are unrivaled by other national clubs. Harvard Business School noted in a case analysis report on Real Madrid Club in Spain, "This is the only brand among the top 20 brands in the world that is very famous, from its CEO to its players." Real Madrid has around 287 million followers worldwide." Real Madrid Club's brand worth is currently among the highest in Europe, having reached 10 billion euros [4]. Real Madrid, as the most powerful club in the Spanish Football League One, has progressively eclipsed the Serie A and English Premier League giants to become the best club in the football industry. Its commercial business is unquestionably a model of economic operation in the world of football and even in the corporate sector.

Real Madrid's revenue is divided into four categories: membership and stadium revenue, competition revenue, television broadcasting revenue, and market development revenue. Real Madrid's revenue is expanding dramatically, and the proportion of market development revenue to total revenue is also increasing rapidly, showing that market development revenue is the main economic source of Real Madrid's revenue and a typical business strategy for Real Madrid. Florentino's business model for creating Real Madrid through commercial operations is "large-scale capital investment + star effect + modern leading football management philosophy + capital operation + brand management." Obtain high money from ticket sales, star effects, jersey sales, commercial competitions, and other forms, and this business model under this concept has also helped Real Madrid to develop remarkable success in both competitive and commercial elements.

3. Analysis on Problems

3.1. Reasons on Market Management Philosophy

Real Madrid's transformation began with the arrival of Perez, who challenged the club's established business strategy. Perez arrived deeply in debt, and he discovered that Royal Madrid's management model was quite antiquated, which he continually revised during his tenure in office to fit to the evolution of today's society [5]. Through talent mining, changing the club's internal personnel appointed to improve the efficiency of doing things, changing the way of signing players, expanding influence, constantly attracting a large number of star players to join, transforming Real Madrid into an international brand to generate income, and exploring the surface, Real Madrid's international intangible value reached 500 million euros in each game according to the different ticket prices to maximize revenue.

Real Madrid has also made great efforts to increase the attractiveness of its fans. Real Madrid has taken measures to increase fan loyalty, including club ownership, membership card hierarchy, fan loyalty programs, and digital marketing [6]. The football club brand is conducive to winning the loyalty of fans to the club and its products; attracting people of all ages and social classes to ensure brand longevity; enabling the club to obtain low marketing expenses; and improving the club's operational efficiency [7]. During the 2019–2022 outbreak, Real Madrid's fans are still very loyal, and fans enjoy not only the exciting games but also the rights that many other clubs are unable to offer. This is one of the reasons why Real Madrid remained brilliant during this difficult time.

3.2. Reasons on Excellent Youth Training System

A team's success cannot be improved without the assistance of a competent youth training system. A reasonable and comprehensive youth training system can provide a consistent supply of reserve talents for the team, allowing it to maintain a high level of competitiveness and a reasonable age structure, which is to exchange large market investments for strong market attractiveness and higher income. Every year, Real Madrid unearths and develops a large number of excellent football players in its junior training system, offering possibilities for the first team. This not only makes the acquisition of some new players easier, but it also allows the squad to be more stable.

A well-developed youth development system is also a significant source of revenue for major football clubs. The economic benefits of a youth training program for a football club are mostly represented in two areas: To begin, the youth training system is the primary means of transporting talents to the club, and the quality and quantity of exceptional football talents are determined by the youth training system's excellence. Excellent football abilities are frequently the foundation for clubs to enhance their results, and the quality of club performance has a direct impact on the club's economic benefits in numerous aspects such as ticket income, sponsorship fees, membership fees, and so on. Second, a competent youth training system is typically the nursery of superstars, capable of producing powerful players. Once a club develops exceptional players, whether the club plans to sell or use them, their value is significant [8].

Sam Nass is a former youth training director at Real Madrid, and in an interview, he talked about some of the secrets of Real Madrid's youth training: “Our goal is to provide players with sufficient cultural education, a sports foundation, and communication skills. This way, they can do what they want to do outside of their career.” In the process of cultivating young players, Real Madrid not only focuses on skill training but also on the potential of players. In the game, it emphasizes cooperation, emphasizes interpersonal relationships, promotes unity among players, enhances their confidence, and makes great efforts for the growth of young players.

3.3. Reasons on Team Culture

The club's culture is a key reason why Real Madrid Club can continue to be competitive. Florentino made a point of emphasizing his need for superstars after taking office. The best interpretation of this technique is the "Zidane + Paven" policy. Although the "Galaxy One" era was not ideal for Real Madrid's physical performance, the cultural influence of celebrity teams brought to Real Madrid by Beckham, Zidane, Ronaldo, Figo, and others has been significant. Real Madrid's culture is expressed not just on the pitch but also in the white jerseys that have been passed down through generations, team anthems shouted by supporters, the development of popular peripheral items, and collaboration with other businesses such as Adidas and Emirates. Real Madrid's brand competitiveness has been consistently increased as a result of these market efforts.

Real Madrid has actively invested in the development and improvement of the New Bernabeu Stadium in recent years, which not only increases its competitive hardware facilities but also delivers significant benefits to Real Madrid. The new Bernabeu stadium will be a sophisticated sports arena, according to the concept. The stadium, which can house 80,000 people, will have a weather-independent ceiling. Furthermore, the new stadium's grass can be retracted and shifted, allowing alternative locations for different types of activity. According to market estimates, Real Madrid earns around \$400 million each year from its operations at the Bernabeu. This will contribute to Real Madrid's future financial development and investment [9].

4. Suggestions

4.1. Suggestion on Market Management Philosophy

According to the preceding analysis of Real Madrid's market management philosophy, the success of Real Madrid can also be utilized as a model for the development of domestic clubs. Domestic clubs should change their development direction, establish a positive impression of the team brand in the hearts of domestic fans, strengthen team member training to improve good results, improve fan rights, and increase fan loyalty, and enable the club and brand to continue to develop and grow. At the same time, internet marketing has become popular, and domestic teams should actively pursue online marketing strategies. The English Premier League has announced that the local broadcasting rights for the three seasons 2016–2019 have been sold to Sky TV and BT for £5.136 billion, an almost 70% increase. Despite the poor performance of the English Premier League's top players in the Champions League and the English national team in the World Cup, the Premier League maintains strong market competitiveness, which is closely related to the league's mature marketing strategies.

The English Premier League clubs have made reasonable use of the open platform of the Internet to fully leverage the functional advantages of online marketing in the overall marketing strategy of the clubs, ensure the smooth development of online marketing activities through diversified information channels and convenient transaction channels, and continuously improve the marketing level of clubs, and "data-driven" marketing provides a new imagination for online marketing [10].

4.2. Suggestions on Establishing and Maintaining Excellent Youth Training System

The successful experience of Real Madrid's youth training can be attributed to several aspects: integrating innovative methods and traditional training, paying attention to details, tracking the development of players, providing them with necessary support and guidance, and promoting their development.

To begin, a successful youth training system necessitates a sophisticated data analysis system capable of monitoring the growth status of young athletes in real time and precisely adjusting the next training plan. Big data allows for better knowledge of player and team performance, allowing for

targeted training or the development of corresponding plans. Establish a high-level database by evaluating basic basketball data, such as player efficiency (PER) per minute performance, a player's true shooting percentage (TS%), and an effective shooting percentage (EFG%). When compared to basic statistics, higher-order data can better reflect a player's or team's true offensive and defensive talents, and the results can be used for targeted practice in areas that require improvement [11].

Second, youth training plays a significant role in developing scientifically ambitious future plans for each young player based on detailed analysis and development for the future while also taking into account the qualities and demands of players at various levels. There are comparable rules and thorough training regimens for each step, from childhood through adulthood. The "unified guiding principle" of "player training should be based on long-term goals" has been proposed, assuring that the quality of Japanese youth training will improve. This concept's proposal does not imply the implementation of uniform training advice in schools, training echelons, or clubs at all levels. However, coaches must understand that when there are changes and alternations between the team and the coach, they can also effectively connect the current level and future development of the players and provide effective guidance based on the age group of the team they are leading. Cultivating matching guiding concepts in different age groups can aid in the progression of both players and coaches [12].

4.3. Suggestions on Creating Good Team Culture

To some extent, Real Madrid's team culture has guided the operations of Chinese football clubs. Concerning the star effect, clubs should deliberately promote players that have a favorable impact on the team's competitive level and market attractiveness in order to boost the team's attractiveness and attention and play a super powerful star effect. Football is a very labor-intensive sport; therefore, economies of scale and a shortage of the most skilled players are the primary determinants of high revenue levels. The marginal income product of a player is specifically related to the additional price that the audience is willing to pay to see their game (live or on television) multiplied by the number of viewers they attract. The link between personal productivity and compensation can produce a "superstar" effect in this setting [13].

At the same time, teams should prioritize the development of team culture and the establishment of their own image, such as cross-border collaboration with other brands; carefully designing team logos such as jerseys, team badges, team songs, and team elements to deepen the impression of fans; inviting well-known public figures to interact and promote; shooting advertisements to promote team culture; actively engaging with fans; creating a good team atmosphere; and so on. Many fans believe that teams have massive market potential for manufacturing iconic merchandise.

There is also an important factor, which is that the development and sales status of club logo products are closely related to their team's performance. Faced with the influx of a large number of well-known foreign club logo products into China, the club is striving to expand the market and apply the development income of logo products as an important supplement to the club's economic source [14]. These methods can, to some extent, enhance the brand attractiveness of the team.

5. Conclusion

This analysis is based on the 2019 COVID-19 outbreak in the world, which has greatly impacted people from all walks of life. Soccer clubs around the world have suffered varying degrees of losses, and the economic downturn has led the Real Madrid Football Club to investigate what kind of management styles and business strategies they have adopted in order to be the only team that still made a profit during the pandemic. By combining statistics and information on their management techniques and policies throughout the recent pandemic, this study analyzes the reasons for their

success, exhibits the impacts, and makes recommendations. Real Madrid's market management philosophy, excellent youth training system, and squad culture are the three causes examined.

This study has once again underscored the importance of the business strategy of expanding influence through talent acquisition, optimizing staff appointments to enhance operational effectiveness, and revising player acquisition methods, alongside fostering a robust youth development system and cultivating a positive team culture, as key factors in sustaining the financial viability of a soccer club. This paper analyzes the Real Madrid situation and presents recommendations that offer benefits not only to Real Madrid but also to other prominent soccer clubs worldwide. These recommendations aim to enhance team popularity and bolster team profitability. The present study holds significant academic merit.

There are various limitations inherent in this analysis. The lack of creativity in the exploration of concepts and processes is coupled with an overreliance on the ideas and methodologies of others. The analysis methodology employed in this study is deemed to be overly constrained, as it lacks the inclusion of specific data to effectively illustrate the challenges under investigation. Furthermore, the utilization of available data fails to adequately support the thesis, hence rendering it insufficient. Real Madrid intends to employ a diverse range of analytical methodologies in forthcoming research endeavors. These methodologies will encompass not just case studies but also comparative analysis, facilitating a comprehensive exploration of the identified problem.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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The Effectiveness of Football Economy Empowers Socio-Economic Development: A Case Study of Cristiano Ronaldo

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Abstract: This article primarily used Cristiano Ronaldo's 2018 transfer to Juventus F.C. Club as a case study to analyze and summarize how the star effect brought about by Cristiano Ronaldo in this event promotes the development of the football economy while empowering socio-economic development. Through case analysis, this article concluded in three aspects. In the football industry sector, the signing of football stars had positive effects on both the team and the league. It was recommended that the league and clubs introduce players with strong personal abilities as needed and actively exert their social influence to promote the development and improvement of the club and league. In the social development sector, the joining of football stars will promote the development of related industries. It was recommended that all regions attach importance to the development of football and actively promote the empowerment of the football economy in the social economy. At the same time, there were certain shortcomings in the model of empowering economic development through sports stars. It was recommended that players establish a good social image and moral literacy.

Keywords: football economy, sports economy, Cristiano Ronaldo, star effect

1. Introduction

The football economy's contribution to the global economy has grown in recent years, and it is now a key part of the global economic system. In 2021, the English Premier League, for example, provided 0.01% of world GDP (roughly 96.51 trillion yuan) [1]. The football economy's contribution to the social economy is complex, with some having an impact on the development of industries in the social economy, while others have an impact on the long-term development of the football economy's internal structure. The elements influencing the growth of the football economy are also numerous. Starting with the football star, the author wishes to investigate the role of the football star effect in the process of empowering the social economy in this essay. The complete book will utilize the famous football star Cristiano Ronaldo as an example to explore to ensure the efficiency of the exploration.

Cristiano Ronaldo is a constant and vital presence for Real Madrid. However, around 2018, Real Madrid began to make significant changes to their players on the pitch. Cristiano Ronaldo finally chose to depart for a variety of reasons and considerations. Juventus has long been the leading club in Italy's Serie A league, with a strong reputation and standing. Cristiano Ronaldo's arrival is obviously not a significant boost to his chances of winning the Champions League. At the same time, despite years of a lack of top-tier Serie A players and being heavily struck by the economic crisis,

Cristiano Ronaldo's entrance has generated significant traffic and attention, giving Serie A new life. At the moment, academics are focusing on the reasons behind Cristiano Ronaldo's transfer to Juventus and how other sports sectors might benefit from this tragedy.

The academic community has paid attention to Cristiano Ronaldo's celebrity effect, but all assessments have been undertaken in a specific area. Ziyang Zuo examines how local clubs might recruit superstars like Faker in the esports sector, using Cristiano Ronaldo's transfer to Juventus as the research object [2]. Ziyang Zuo investigates the impact of athletes' performance and personal abilities on their income in competitive sports using analogies [3]. Panji Putranto investigated the influence of Cristiano Ronaldo's arrival on Serie A club stock values [4]. The study looked at the favorable impact of Cristiano Ronaldo's statement that he would be joining Juventus' music department on the stock prices of Serie A club stocks 10 days before and after the announcement [4]. At the moment, experts' examination of the economic benefits of Cristiano Ronaldo's transfer to Juventus is mostly focused on the increase in his salary and achievements, with little consideration given to the incident's positive impact on the social economy. Scholars, on the other hand, mostly analyze the impact of the football economy from the perspective of the entire football industry, with little analysis of individual impact and role, as well as in-depth exploration and exploration on how to exploit personal advantages to promote the development of the football economy and social economy.

As a result, this essay will investigate how, in the example of Cristiano Ronaldo's transfer to Juventus, Cristiano Ronaldo, as a world superstar, leverages the star effect to promote social and economic development via the football economy bridge. For the football market, this study is beneficial for clubs and sponsors to better utilize the star effect to increase industry revenue; for theoretical development, it is beneficial to comprehensively analyze the contribution of the football economy to the social economy. This article will explore the positive impact that can be widely applied to the transfer of Cristiano Ronaldo to Juventus through case analysis.

2. Case Description

Cristiano Ronaldo, born on February 5, 1985, in Portugal, is a forward who is widely regarded as one of the best players in world football history. He has accomplished outstanding performances on the field and has received numerous honors. His outstanding achievement has also gained him widespread notice and attention. His fan base on the three major social media platforms—Instagram, Twitter, and Facebook—surpassed 400 million at the start of 2020, a milestone that not only topped the football industry but also ranked first in the world. Meanwhile, Cristiano Ronaldo has signed 31 sponsorship contracts spanning numerous businesses and fields throughout his career, making him the most valued player in the international football market. Cristiano Ronaldo revealed in 2018 that he will quit Real Madrid after nine years to play for Juventus F.C. Club (the following name is Juventus) after helping Real Madrid win the Champions League. On July 10, 2018, Juventus, the Serie A club, officially announced Cristiano Ronaldo's transfer from Real Madrid Club to the team for a fee of up to 100 million euros. This transfer is an example of Cristiano Ronaldo's star effect, and as a result, Juventus Club has improved significantly in terms of social attention, team revenue, and team stock price.

On social media, after Cristiano Ronaldo joined the team, Juventus' Instagram followers increased by 1.4 million, Twitter followers increased by 1.1 million, and Facebook followers increased by 500,000. Meanwhile, Real Madrid's social media fan base decreased by 1 million followers within 24 hours of Cristiano Ronaldo's official departure [5].

In terms of team revenue, 24 hours after the official announcement of Cristiano Ronaldo's joining, Juventus sold 520,000 Cristiano Ronaldo jerseys, resulting in a shortage of stores. Previously, in 2016, Juventus sold only 580,000 jerseys [5].

In terms of the team's stock price, before the transfer of Cristiano Ronaldo was officially finalized and announced, Juventus' stock rose by 22 percentage points from July 3 to July 5 due to the news that Cristiano Ronaldo was about to join. At the same time, its net worth increased by 175 million euros, and its market value increased from 650 million euros to 825 million euros. Within the six months since Cristiano Ronaldo joined, Juventus' stock price has risen from 0.7 euros to 1.81 euros, an increase of 91%, and its total market value has also increased from 650 million euros to 1.218 billion euros, making it one of the best stocks on the Italian trading market in 2018 [6].

In terms of league efficiency, since the 21st century, the Serie A league has been less competitive than major leagues such as La Liga and the English Premier League due to commercial development and overall team strength. The addition of Cristiano Ronaldo has promoted the attention and ratings of the Serie A league, and the Serie A league can also have greater profit space in league broadcasting rights and broadcasting costs.

In summary, Cristiano Ronaldo joined Juventus in 2018, which brought significant benefits to the Juventus club and the entire Serie A league, empowering the development of the Serie A football economy and bringing significant benefits to the team and the Serie A league.

3. Analysis on Problems

3.1. Effective on The Football Industry

In the football industry sector, the joining of football stars has brought certain positive effects to both the team and the league. In the incident of Cristiano Ronaldo's transfer to Juventus, after Cristiano Ronaldo joined the team, Juventus' Instagram followers increased by 1.4 million, Twitter followers increased by 1.1 million, Facebook followers increased by 500000, and Juventus' club stocks also showed a significant increase. This, after Cristiano Ronaldo's transfer to Juventus, brought higher attention to the team's events, attracted more viewers and sponsors to participate in the club's events, and thus promoted the increase in ticket sales and advertising revenue of his club.

Xuan Zhang posited that the phenomenon known as the celebrity effect exerts a discernible influence on various facets of sports event marketing, including but not limited to ticket sales and broadcasting rights sales. This study employs a case-analytic approach to examine the influence of various sports events and sports personalities, highlighting the significance of using the efficacy of sports stars [7]. Yunfeng Guo's study also presented multiple strategies for cultivating the sports celebrity impact and ultimately determined that leveraging sports superstars for the promotion of sports products is the most effective utilization of this phenomenon [8].

In summary, the signing of football stars has played a significant role in promoting the football economy.

3.2. Effective on The Social Development Sector

The signing of football players would encourage the growth of allied enterprises in the social development sector. In the case of Cristiano Ronaldo's transfer to Juventus, Juventus sold 520000 Cristiano Ronaldo shirts within 24 hours of the official announcement, resulting in a retail scarcity. To some extent, this has fueled the rapid growth of jersey manufacturers working with Juventus, bringing additional consumer demand to the connected manufacturing business. Manufacturing is only one of the industries that are relevant. For example, since Cristiano Ronaldo's transfer to Al-Nassr FC, the Saudi League's influence has grown, and more and more world stars have moved to Saudi Arabia, promoting the development of Saudi football to some extent, providing more jobs for society, and promoting social and economic development.

According to Xuan Cui, the growth of the football economy plays a crucial role in the whole social economy by providing a platform for enhancing its development [9]. Concurrently, he asserted that

the football economy has the potential to effectively mitigate issues such as unemployment and other multifaceted concerns across several sectors [9]. Moreover, the football economy has successfully facilitated the economic advancement of the manufacturing sector, leading to an overall increase in the societal economic value throughout the developmental trajectory [9]. Consequently, it effectively stimulates the comprehensive progress of the social economy [9]. Jun Zhuang also observed that the football economy has experienced significant expansion, encompassing various sectors [10]. This growth has not only addressed unemployment concerns by creating job opportunities for individuals but has also stimulated the progress of associated industries, including football manufacturing and sportswear production [10]. In summary, the development of the football economy plays a significant role in promoting the development of the social economy.

3.3. Negative Effectiveness on The Sports Star

A large amount of funds and resources are mostly concentrated in the hands of a few top players, and the social impact is caused by the personal misconduct of players. In the four transfer events of Cristiano Ronaldo's transfer to Real Madrid, Juventus, Manchester United, and Al-Nassr FC, he was affected by his competitive level. With the increase in Cristiano Ronaldo's age and the fluctuation of his competitive level, his influence is constantly changing, and the social evaluation of his ability is also changing with the fluctuation of his competitive ability. Not only that, but Cristiano Ronaldo has also engaged in inappropriate behaviors such as disobeying the head coach's commands and publicly bombarding the club, which have hurt his star effect and reduced his driving effect on the football economy.

In addition to Cristiano Ronaldo, Neymar has also been exposed multiple times to rumors of infidelity and multiplayer parties. In addition, Neymar has been absent from the Ligue 1 league for a long time due to illness, and his competitive level has declined. Therefore, in recent years, his reputation has become increasingly poor, and his value has continued to decline. Mason Greenwood, an outstanding player in Manchester United's youth academy, was arrested on January 30, 2022, after his girlfriend accused him of domestic violence. After 12 months of investigation and mediation, his charges were terminated on February 2, 2023. However, the social discussion and attention caused by this incident did not end, and his accusation also had a very negative social impact. Manchester United fans also had constant disputes over whether he could return to the club, and in the end, the club chose to dismiss him under immense public pressure.

Therefore, the utilization of the football star effect requires a good social image of the players themselves; otherwise, the star effect it brings will be negative and difficult to control, and it will also have a promoting effect on the football economy and social economy.

4. Suggestions

4.1. Teams Actively Introduce Players with Strong Personal Abilities

Leagues and clubs should introduce players with strong personal abilities as needed and actively harness the social power of sports stars to enhance club and league development and improvement. The recruitment of great players who are compatible with the club will aid in the improvement of the team's capabilities and competitiveness. At the same time, as a top player, they are quite appealing. Messi's transfer to Miami International, Cristiano Ronaldo's transfer to Al-Nassr FC Victory, and other transfer events, for example, have not only driven the development of the American Football League and the Saudi Football League but have also attracted more football stars to the league and increased the team's and league's broadcast income, advertising income, and ticket income. According to reports, the ticket price for the Miami International vs. Los Angeles LAFC match was the highest

in the American Sports League's regular season history, with the best-priced seats costing roughly \$17102 per ticket.

In summary, introducing players with strong personal abilities will not only improve the team's level but also help the team increase ticket revenue, peripheral income, etc., and bring greater attention to the league, thereby helping the league increase broadcasting revenue, etc. Provide impetus for the optimization and development of the internal structure of the football economy.

4.2. Promote The Development of Football Culture in Various Regions

Various regions value football development and actively promote the empowerment of the football economy in the social economy. At the moment, the football economy and socioeconomic development are becoming increasingly intertwined, and the success of the football economy frequently leads to socioeconomic improvement. It not only creates new work opportunities, but it also supports the growth of football-related enterprises. The development and innovation of team jerseys, player co-branded sneakers, club products, team tickets, and friendly matches not only increase consumer demand but also stimulate the production of local related enterprises, thus playing a role in the development of the social economy.

Based on the findings of Xuan Cui's study, it can be observed that the football economy has played a significant role in driving the progress of adjacent businesses. Furthermore, the expansion and advancement of the football industry have exerted a discernible positive impact on the growth of specific neighboring economies [9]. The growth of football markets in various regions, the emergence of football superstars, and the enhancement of football standards collectively contribute to the ongoing advancement of the football economy. Furthermore, the development of the football economy significantly influences the economic progress of society, infusing dynamism into the social economy [9].

In summary, the region continues to promote the development of football, not only improving the level of competition but also bringing consumer demand and increasing the production enthusiasm of related industries to the surrounding area, driving the diverse development of the local economy, providing new ideas for solving social problems, and promoting the vigorous development of the social economy.

4.3. Urge Football Stars to Establish A Good Social Image and Moral Awareness

Encourage football stars to cultivate a positive social image and increase moral restraints in order to mitigate their harmful impact. Football celebrities get a lot of attention and traffic. In everyday life, people actively participate in activities that build excellent moral character, such as social welfare, which not only raises public awareness of social issues but also serves as a benchmark to guide the public to continuously improve their moral level. English player Jack Grealish made a joyful gesture in honor of leukemia patients after scoring a goal during the World Cup. This behavior not only produced a positive player image but also enhanced public awareness of leukemia.

However, immoral and unlawful activity by sports stars can have a severe societal impact. For example, inappropriate behavior by players with a high social discussion and a large number of fans may produce team and societal problems as well as injury to fans. The Mason Greenwood domestic violence event has had a bad impact on society and clubs.

The development of a positive social image of celebrities is essential for increasing the implicit market impact of sports stars, according to research by Bendong Hu [11]. Based on his research, the emergence of sports stars or exceptional athletes fulfills the public's need for physical fitness and vitality [11]. Consequently, in order for clubs and leagues to delve into the concealed impacts of sports stars, it is imperative to cultivate a favorable societal perception of these sportsmen.

In summary, the establishment of a good social image and moral character among football stars can not only set a good example for the public and increase their attention to more public welfare activities, but also better unleash the star effect and empower social and economic development to a greater extent through the football economy.

5. Conclusion

In 2023, football superstars such as Cristiano Ronaldo, Messi, and Neymar successively left the five major leagues of European football. Looking back on their achievements in the football field, it can be found that these superstars not only promoted the prosperity and development of the football level but also provided the impetus for the development of the football economy and even the social economy. In this context, this paper takes Cristiano Ronaldo as an example, starting from the star effect he brought and, through the case of his transfer to Juventus club in the summer of 2018, exploring how the football economy exploits the star effect as a bridge to empower social and economic development.

This study aims to provide insights into the football market, specifically focusing on how clubs, leagues, and sponsors can effectively leverage the star effect of players to enhance revenue generation across various dimensions within the industry. Additionally, from a socioeconomic standpoint, this research will assist governmental entities in identifying novel strategies to bolster economic empowerment. Lastly, from a theoretical perspective, this study will facilitate a comprehensive analysis of the football economy's contribution to the broader social economy, thereby advancing scholarly understanding in this domain.

Nevertheless, it should be noted that the scenarios examined in this paper are constrained in scope and lack absolute generalizability. Cristiano Ronaldo is widely recognized as a prominent figure in the realm of sport, and his influence on popular culture is characterized by a unique and discernible impact. Nevertheless, the study's utilization of data analytic procedures and economic theories is constrained, hence diminishing the overall persuasiveness of the research. Moreover, there remains potential for further inquiry into the means by which to foster the evolution of football culture inside local communities, effectively harnessing the influential power of players to stimulate local economic advancement.

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Important Drivers of European Monetary Integration

——The Game Between the German Central Government and the Bundesbank as an Example

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Abstract: An independent central bank constitutes a veto actor in the political process itself and has the potential to limit the autonomy of the State (Government). In cases where the preferences of the state and the central bank diverge, the resulting authoritative actions will be influenced by the political structure of the respective country. Where changes in the domestic political system are difficult to achieve, the state can change the existing equilibrium between the central bank and the government by engaging in international regimes and international negotiations and evolving this equilibrium in the direction of greater state autonomy. This paper adopts a case study approach to propose a domestic political logic for international monetary policy choices by analyzing the relationship between international monetary co-operation, central bank independence and national autonomy, and uses the political game between the central central bank and the central government within Germany and the outcome to verify this view, thus providing a political science explanation for the relationship between German monetary politics and European monetary integration. The European Central Bank after the formation of the Union inherited the independence of the German central bank, and while assuming its responsibility for monetary stabilization and economic development, it gradually transcended the scope of its monetary functions and transformed itself from a purely technical institution to an important political player in the regional political and economic arena in the process of the already existing institutional constraints and changes in the economic situation.

Keywords: European Monetary Union, the independence of central bank, state autonomy, Germany

1. Introduction

From the inception of the European Payments Union in 1950 to the ultimate adoption of the euro by eurozone member nations in 2002, European Monetary Integration has experienced over five decades of growth. Despite encountering significant setbacks at nearly every stage, European countries have managed to surmount these challenges and successfully advance monetary collaboration to a more profound level. By examining this progression through the lens of international political economy, several insightful observations can be made.

The drivers of monetary integration are both economic and political, and in the case of Europe, the most decisive driving force in the early stages of integration has been domestic political factors inside the participating countries, especially in the larger ones, since higher levels of monetary integration, have to be backed by sufficient domestic political support because of the involvement of the ceding of economic sovereignty. In this process, the attitudes of important domestic interest groups are particularly essential.

The State has greater autonomy in monetary policy than in other trade policies. However, the freedom of action of the state in the monetary sphere does not mean that the autonomy of the state is unrestricted, and independent central banks are often seen as "apolitical" and technical institutions [1], and Owing to their distinct roles and responsibilities within the domestic framework, the interests of the state and the central bank may occasionally clash, resulting in institutional discord and tensions. Being among the most autonomous central banks globally, the majority of Germany's monetary policy responsibilities are delegated to the Bundesbank, an institution that operates independently from the government. As a result, the domestic political disputes surrounding European monetary integration in Germany are mainly between the federal government and the central bank, and the relationship between the two has become an important theme in monetary politics.

The perspective of this paper points to the monetary politics of international economic co-operation and the game of domestic political actors around this theme, specifically the question of how Germany formulated its international monetary policy in the midst of domestic political strife around the Mark, which is of great value in analyzing the relationship between Germany and European monetary integration and in understanding the relationship between domestic monetary politics and international monetary co-operation. Section 2 conducts a literature review, analyzing the shortcomings of the three main perspectives on this topic and presenting the ideas of this paper. In terms of research methodology, the paper as a whole adopts the methods of comparative historical analysis and case study analysis to propose a domestic political logic of international monetary policy choice based on rational choice institutionalism by analyzing the relationship between international monetary cooperation, central bank independence and national autonomy (Section 3), and takes the Schmidt government and the European Monetary System (EMS) and the Kohl government and the European Monetary Union (EMU) as case studies respectively to concretely illustrate the correspondence of this theoretical framework in the German context (Section 4), thus providing a political science explanation for the relationship between German monetary politics and European monetary integration. Section 5 analyses how the European Central Bank (ECB), which has inherited the strong independence of the German Central Bank, can continue to expand its own autonomy and policy influence over the euro area in the face of changing economic circumstances and dilemmas, and gives recommendations for its future development.

2. Literature Review

The following two perspectives on the interaction between the federal government and the Bundesbank are representative of the academic community on the issue of monetary co-operation in Europe, but both also have significant shortcomings.

The first view is based on Robert Putnam's "two-tier game" model, which argues that the Bundesbank's constraints on the federal government allowed Germany to maximize its own interests in European monetary co-operation [2]. In other words, the Bundesbank played the role of a domestic ratifier of international agreements, and its strong position narrowed the "winning pool", thus placing Germany in a more favourable position in international negotiations, and the Bundesbank itself became a beneficiary of the "two-tier game". Dorothee Heisenberg argues: "Because of Germany's historical legacy, political parties are not in a position to criticize European integration, especially after reunification, which would be labeled as anti-European. The defence of Germany's interests fell

to the Bundesbank, which was outside the political process. The Bundesbank transformed itself from a domestic institution into an international actor and defended Germany's own economic interests better than any political party." [3] This explanation can be a good illustration of the relationship between European monetary co-operation and the German monetary system, e.g. the European Central Bank is in a sense a replica of the German Bundesbank. However, "objectively favourable" is not the same as "subjectively intentional". The institutional conflict between the Bundesbank and the Federal Government stems primarily from differences in preferences between the two, not exclusively from international negotiating tactics. This view, in particular, does not explain the Bundesbank's resistance to monetary integration from the outset.

The second view, in contrast to the first, sees the Bundesbank as a loser from European monetary co-operation. According to this view, as European monetary co-operation advanced, and especially with the establishment of EMU, the Bundesbank gradually lost its autonomy over monetary policy until it eventually lost the Mark, and this loss was exchanged for political gains for the federal government in terms of national unity and domination of European integration. David Marsh, for one, notes that "the Bundesbank is the most important loser if EMU becomes a reality" [4]. Although the Bundesbank enjoys broad public support within Germany, as Karl Kaltenhalle points out, as enthusiasm for monetary integration has grown, the central bank's social links have weakened, leading to a decline in the Bundesbank's ability to unite with other social forces to influence government decisions [5]. Therefore the interaction between the federal government and the Bundesbank still needs to be explored. Peter H. Loedel shares this view. Since the G7 is a weak governance structure, disagreements between the federal government and the Bundesbank can enable Germany to take a strong position in international bargaining. However, under the strong governance structure of European integration, disagreements between the federal government and the Bundesbank are not sufficient to enable Germany to take a strong position in international bargaining. He suggests in this regard that "even if there are major disagreements between the Bundesbank and the government, the government will try to force the Bundesbank to comply." [6] Bovenberg and Masson, among others, have also suggested that Germany's negotiating strategy in European monetary co-operation, led by the German federal government, is best portrayed as a mixture of a strategy of compliance and a strategy of assertiveness [7]. However, this interpretation focuses primarily on how domestic political disagreements in Germany affect the choice of negotiating strategy for international cooperation, without analyzing in depth how the international regime and international negotiations affect the federal government's game with the Bundesbank, and thus fails to adequately account for the domestic political strife in Germany surrounding international monetary policy. Besides, considering that many of the Bundesbank's claims are actually reflected in the EMU mechanism, calling it a "total loser" is suspected of being an exaggeration.

In view of the shortcomings of the existing literature, this paper attempts to link the concepts of international monetary co-operation, central bank independence and national autonomy, adopts the method of comparative historical analysis, proposes a domestic political logic of international monetary policy choices on the basis of rational-choice institutionalism, and illustrates the correspondence of this theoretical framework in the German context by taking the cases of the Schmidt government and the EMS and the Kohl government and the EMU as illustrations respectively, so as to provide a political theory explanation for the relationship between monetary politics in Germany and the EMU.

3. Theory Framework: Country Autonomy, Central Bank Independence and International Monetary Cooperation

The State is the most important public authority in human society. On the basis of the distinction between State and society, social scientists have developed the concept of "state autonomy". Theda

Skocpol points out: "The state is viewed as an entity that rules over its citizens and its territory. It is not limited to reflecting the interests of social classes, organizations, or societies; it is capable of setting and pursuing its own objectives." [8] Eric Nordlinger also claims, "State autonomy is correlated with how much the state converts its own preferences into authoritative behavior and how much public policy is deferred to a grid of public officials' resource-weighted choices."

The central bank, as a public authority, also has autonomy against the state (government) in the performance of its monetary functions of formulation and implementation. Central bank independence allows it to determine its objectives autonomously in the formulation of monetary policy without following the direction of government policy in other areas, mostly the maintenance of inflationary stability, or the maintenance of price stability, which may give rise to an inconsistency between the preferences of the state and the preferences of the central bank.

Under conditions of central bank independence, if state preferences and central bank preferences do not coincide, what translates into authoritative behaviour will depend on the country's political system, which provides a structure that allocates control over issues to different actors, chooses the order in which actors act, and determines what actions each actor can take, thus determining whose preferences best dominate policy-making. Thus, changes in institutions lead to changes in the strength of central government and central bank autonomy. In this sense, we can rely on Ripsman's three determinants of national autonomy to show how international monetary co-operation changes the outcome of domestic politics. First, in terms of institutional structure, when central bank independence is strong, the central bank sets monetary policy independently under the guarantee of formal legislation. Since exchange rate policy is not only monetary policy but also foreign policy, and the formulation of foreign policy falls within the government's responsibility, once international monetary co-operation is underway, the government can use its legal powers over foreign policy to achieve its objectives in exchange rate policy, thus gaining a negotiating advantage over the central bank. Secondly, in the decision-making process, since the government is the initiator and participant of international negotiations, the government has more information than the central bank in international negotiations, and then achieves its own goals by manipulating this information asymmetry. Ripsman points out that due to the secretive nature of many international negotiations, administrations are able to circumvent domestic opposition through three complementary strategies: hiding, misleading and blaming [9-10]. Finally, regarding procedural norms, the state holds significant legitimacy in its involvement in global affairs, as it is situated at the juncture of domestic and international political economy. Due to its unique position, the government possesses increased credibility in formulating and executing foreign economic policy compared to implementing public policy that is primarily centered on domestic issues [11]. In this way, governments may mobilize greater public support for their own preferences in monetary policy, and may even get central banks to accept the government's preferences because of the legitimacy it enjoys without even launching a political mobilization (Figure 1).

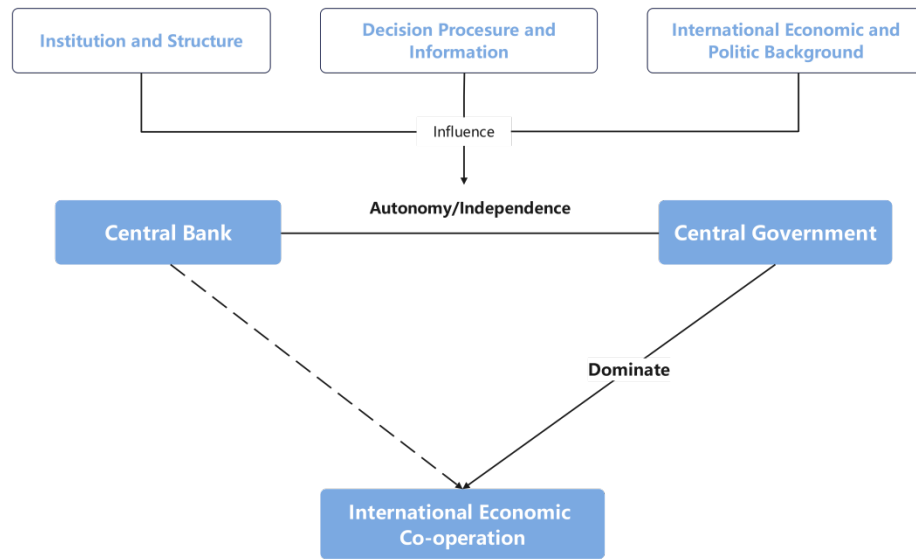


Figure 1: Theoretical framework diagram.

4. Basic Fact Analysis: The German Government-Central Bank Game

4.1. Basic Fact: Efforts of the Schmidt Administration and the Kohl Administration

Until the European Community in 1973 to establish a "serpentine floating system" before the stage, the central government and the Federal Bank in monetary policy preferences are basically the same. With Schmidt became chancellor in 1974, the Bundesbank and the federal government in the European monetary co-operation on the preference for a clear conflict: the federal government began to put more emphasis on the European exchange rate co-ordination, hoping to remain the stabilization of the exchange rate to ensure that the profitability of Germany's export sector, the new bank governor Otmar Emminger is advocating to reduce or even avoid any impediment to the Bundesbank's low inflation policy of the Bundesbank [12].

After the Copenhagen Summit in April 1978, at the behest of Schmidt, a team of experts within the EC, consisting of German, French and British representatives, who avoided Bundesbank personnel, began work on the design of the "immovable object".[13]. Schmidt used the foreign policy decision-making process to exclude the Bundesbank from the design process so that the panel would accurately reflect Schmidt's views on European monetary cooperation. On 6 July 1978, the EEC held a summit in Bremen, where the plan to establish a EMS was finally adopted.

In 1979, the EMS came into operation. In the process of dealing with the independent Federal Bank, Schmidt, on the one hand, systematically use the federal government's advantageous position in foreign economic policy, the Federal Bank excluded from the initial agenda, and then according to their own intentions to design the framework of the EMS; on the other hand, Schmidt also used the persuasive approach to strengthen the communication with the Federal Bank for the heart of the United States of Europe's ambitious goals. Schmidt's strong advocacy of the EMS was in itself a manifestation of the Chancellery's desire to transfer power in the monetary field from the Bundesbank to the Chancellery by joining the EMU [14].

The European Monetary System was finally established and came into operation in 1979 under the strong promotion of Schmidt. In the decade that followed, however, the free movement of capital made it more difficult for member countries to control and manage their currencies, especially the

demand for moneys [15]. In 1982, Kohl replaced Schmidt as Chancellor of the Federal Republic of Germany. Most of the major decisions were agreed in advance between Kohl and Genscher before they were made. Both Kohl and Genscher supported the construction of the EMU based on the long-standing view of European integration and they also "wanted to weaken the control of the central bank, and give the government more flexibility in macroeconomic regulation".

Influential opposition to the transformation of the European Monetary System into EMU continues to come from the Bundesbank. Vice-President Helmut Schlesinger insisted that the general objective of domestic economic stability must not be relaxed and that EMU could only be the result of a convergence of economic indicators, which was the Bundesbank's long-held view of "economic priority".

At the 50th German-French summit in November 1987, Kohl "shifted from a position of support for the Bundesbank's promotion of a mandatory free market for capital under a fixed exchange rate to a position of support for the construction of a stable and united market".[16] This meant that Kohl agreed to the creation of a Franco-German economic and financial council, and at the same time it put the Bundesbank even more in a situation from which international co-operation could not be withdrawn. At the end of February of 1988, German Foreign Minister Genscher called for some experts to prepare for the Community's Hanover Summit in June of that year, a move which the Bundesbank opposed. But by this time the Bundesbank was already tightly tied to the German government's friendly co-operation with France, and president Karl Perl also had to admitted that the decision on the European Monetary System would ultimately be a "political decision" of the Chancellery.

The construction of the single currency was officially launched in December 1990 with the Intergovernmental Conference of the European Community and a year later with the Maastricht Treaty. As Peter Lederer notes, "German unification changed the structure of negotiations between the European countries, the German government and the Bundesbank. The constraints placed on the Bundesbank by the Kohl government's commitments to Europe and the Maastricht Treaty, and the vital importance of a successful reunification, shifted the political equilibrium of Germany's domestic negotiations in the government's favour."

4.2. Other Drivers of the Monetary Integration

In addition to the domestic political game described above, regional economic considerations and international political relations were important factors driving the creation of the monetary union.

Theoretically, the promotion of intra-regional trade can be considered the main economic driver of economic integration, which was the primary trigger for Germany's active participation. However, in fact, international political motivation was the most decisive factor. The process of EMU had fully demonstrated that the common political will of the participating parties, especially the two major countries, Germany and France, has a decisive influence on the process of monetary integration. Especially in 1992, when other countries have been sceptical about the future development of monetary integration, it is the two sides of the firm will to cooperate to save the process and prompt Italy and other countries to return to the European Exchange Rate Mechanism [17]. It can be said that the German-French cooperation has dominantly played the role of regional integration.

Despite the obvious influence of the domestic political power game, the consensus on cooperation depends to a greater extent on the position and attitude of the leaders of the participating countries and their identification of national interests, in 1990, in the face of domestic opposition to the pressure, Kohl and Mitterrand reached an agreement on Germany's accession to the future eurozone in exchange for the recognition of the reunification of the two Germanys, is a typical example in this regard.

Finally, integration in different areas does have a mutually reinforcing effect, making monetary integration a "self-reinforcing" mechanism that reflects a degree of irreversibility [18]. On the one hand, as trade and investment integration deepens, the group of people who can benefit from monetary integration will continue to expand, and the integration of other economic areas will have a clear positive impact on economic cooperation both at economic and political level. From the other side, it will also promote transactions within the area and international flows of contributors of production, and promote other areas of regional integration, thereby increasing the demand for monetary cooperation, the formation of a positive feedback effect, which is also some people think that the process of monetary integration has an "endogenous" reason. This is also the reason why the process of monetary integration has been described as "endogenous".

5. From the Bundesbank to the ECB: the Extension of Autonomy and the Future Outlook

It has been shown that the ECB, as a reflection of Germany's experience of socio-economic development and the construction of a central bank, is essentially an expression of the German will in designing and safeguarding its independence [17]. That is to say, at first the ECB was only a neutral technical institution with a relatively high degree of independence within the EC, but under the premise of encompassing economies with different levels of economic development and following different development models, in the following two decades, the monetary integration itself, such as common monetary policy and strict fiscal policy design flaws have made the eurozone's economic policy formulation and implementation more and more complex, and the main problems facing the eurozone, such as the absence of a common monetary policy and strict fiscal policy, have made the eurozone's economic policy formulation and implementation increasingly complex. Complexity, the euro area is facing the main problems of the European Central Bank's traditional mandate and conventional tools are unable to tackle the collective economic difficulties, economic weakness has become the new normal and other issues have gradually surfaced. The confluence of multiple crises has revealed the fact that the governance of the EMU does not lack regulations, but rather the capacity to intervene to implement counter-cyclical policies for the Union as a whole and to address internal imbalances and asymmetries [18]. The challenge of eurozone reform lies in providing a range of stabilizing features, such as banking, fiscal and political union, while respecting the national sovereignty of member States.

In this context, the eurozone debt crisis became the trigger for eurozone governance reforms, while at the same time greatly reinforcing the ECB's policy autonomy, even as it gradually transformed itself from a technocratic institution into a powerful political player - the ECB has risen to a position of leadership in responding to Europe's economic woes, which has been particularly evident during Mario Draghi's tenure as president. This was particularly evident during Draghi's presidency. Draghi consolidated the ECB's position as lender of last resort to eurozone countries, to some extent avoiding the consequences of central banks not being able to bail out specific member states, whose defaults would have led to the bankruptcy of commercial financial institutions and the collapse of the entire financial system, and through unprecedented quantitative easing that has allowed the ECB to play a more independent role in the economy.

Specifically, first, the European Central Bank has taken the initiative to join the financial rescue: its main task is to provide professional assistance on issues directly related to its legal mandate [18]. Secondly, the ECB has taken the initiative to break through the limitations of conventional monetary policy instruments and develop new tools to achieve monetary policy objectives in order to alleviate liquidity constraints in the financial markets. Finally, the ECB undertook the task as a lender of last resort in the eurozone, providing liquidity to vulnerable financial institutions. Central banks were given the power to convert two traditional instruments into last resort: lending to credit institutions and buying and selling private securities and public bonds on the secondary market [19].

Initially, the central bank's main objective was to maintain monetary stability, but as the economic situation changed and economic problems came to the fore, in order to tackle the economic difficulties of eurozone debt crisis and to safeguard the political stability of European integration, the ECB was obliged to pursue a wider and more varied range of policy goals such as the resumption of economic growth, and the reduction of unemployment [19-22]. The approaches that be used to achieve those goals extends well beyond the realm of monetary policy as defined by the Maastricht Treaty and into the realm of economic and fiscal policy, where these decisions have redistributive effects and are ultimately political. The scope and instruments of their policies gradually broke out of their original mandate and went beyond the traditional monetary sphere. It can be argued that when governments failed to reach a consensus on a solution to high levels of sovereign debt, the ECB took the initiative, filled the power vacuum, and gradually transformed itself from a technocratic institution into a powerful political player, becoming "a key player in the EU's economic governance".

The impact of the European debt crisis has not completely dissipated, and it still requires the support of the European Central Bank. It is worth noting that future adjustments and reforms of ECB policy will still rely heavily on this repeated adoption of incomplete and non-sustainable solutions to complete. Yet incomplete reforms can only contain the spread of a crisis or problem, not fully and completely resolve it once and for all, so there are clear systemic risks. If each time an economic problem arises, it is responded to with incomplete reforms of the lowest standard, then in practice these reforms are setting the stage for a new round of crises in the future. Economically, the lack of deep structural adjustments and reforms, and the short-sighted approach of seeking to temporarily tide over the immediate difficulties could have catastrophic consequences for the member countries that are more deeply affected by the crisis. Politically, the problem will be compounded by the fact that the major politicians of the current member States, constrained by the votes of their constituents, will continue to postpone reforms or leave the burden of reforms to their successors. This approach will therefore continue to exist and play a role in the short term, while in the long term the ECB will still need to seek a more sustainable and fundamentally more targeted approach.

6. Conclusion

The political economy literature has provided the basis for theoretical analyses of central bank independence. By placing monetary policy under the control of a central bank that is immune to voter pressure, politicians can strengthen the credibility of their monetary policy commitments [22]. However, there is no "free lunch", and an independent central bank constitutes a "veto player" in the political process, limiting the autonomy of the state. This paper does not intend to engage in a debate about the pros and cons of central bank independence, but rather to point out that the equilibrium between central bank independence and state autonomy varies according to the structure provided by the system, and hopefully to demonstrate the importance of the domestic political game of great powers in shaping international political and economic co-operation. In countries with strong central bank autonomy, and where domestic institutional change is difficult to achieve, the state can change the established equilibrium between the central bank and the state by engaging in international regimes and international negotiations, so that this equilibrium evolves in the direction of greater state autonomy. Germany's engagement in monetary co-operation reflects this logic of monetary politics. In the crucial period of the creation of the EMU, Chancellor Schmidt and Chancellor Kohl made rational use of the priority and freedom that comes with international regimes and international negotiations by excluding the Bundesbank from the initial scheduling of the agenda, and by involving the Bundesbank after forming a plan in accordance with the Chancellery's intentions, thus overruling the powerful Bundesbank's opposition to the Federal Government's own goals. And after the establishment of the monetary union, according to the system design, the European central bank instead of the central bank of each member state began to dominate the monetary policy, in the process

of coping with the economic difficulties, its own autonomy continues to expand, but also due to the slow process of political integration, the European central bank in order to better take on the responsibility of promoting the development of the regional economy, and its role and role is gradually beyond the scope of monetary policy. However, short-term initiatives have never been able to follow the problem, and the deeper governance structure and institutional reform of the eurozone is the right question, for which there is still a long way to go in terms of academic research and political economy practice.

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Adapting to Turbulence: How Global Retail Giants Navigate Trade Wars and Reshape International Trade Norms

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Abstract: More than just a part of the economic landscape, retailing has a profound impact on society, culture, and the market economy. As an integral part of the economic ecosystem, retailing provides goods and services to consumers and is also an enabler of economic growth, closely linked to other industries. Global retail giants play an important role in international trade by increasing supply chain transparency and encouraging suppliers to comply with ethical labor practices and environmental standards. This commitment to sustainability and social responsibility is consistent with the emphasis on fair labor practices and environmental stewardship in international trade norms. However, significant challenges arise when confronted with the trade-off between national interests and the interests of transnational corporations on the global stage. Governments often aim to protect domestic industries and jobs, which may conflict with the interests of global retailers in having smooth access to global markets. Finding the right balance between these interests remains a perennial challenge in international trade discussions. In addition, the burgeoning trade war between the United States and China has had varying degrees of impact on the retail industry. Therefore, this dissertation will delve into the new challenges and changes faced by retail giants in the context of the trade war.

Keywords: international trade norms, global retail, trade wars, multinational corporations

1. Introduction

Trade wars, a defining phenomenon in today's interconnected world, have far-reaching effects on the global economy and geopolitics. These conflicts, characterized by reciprocal tariffs and the imposition of trade barriers, extend their influence across industries and continents. In this context, it is crucial to recognize the prominent players in the international retail sector, including giants like Walmart, Amazon, and Costco. These retailers wield immense power and influence in global markets, playing pivotal roles in the complex web of international trade.

Trade wars fundamentally represent economic struggles among nations competing for supremacy. They manifest as protectionist measures to restrict the flow of goods and services between countries, often involving tariffs, import quotas, and trade barriers. Their significance extends beyond economic consequences to encompass shifts in global alliances, the disruption of intricate supply chains, and geopolitical realignments.

While trade wars may not be a new phenomenon, they continually reshape the global economic landscape. Historical examples include the Smoot-Hawley Tariff Act during the Great Depression and the ongoing trade tensions between the United States and China.

Trade wars typically stem from a complex interplay of factors, combining rational economic concerns with political maneuvering. Catalysts often include currency manipulation, disputes over intellectual property rights, allegations of unfair trade practices, and the desire to shield domestic industries from foreign competition. National interests and the protection of domestic industries can further exacerbate these disputes.

The repercussions of trade wars are multifaceted and extend far beyond immediate consequences like rising consumer prices and disruptions in supply chains. Trade wars erode trust among trading partners, undermine the rules-based international trading system, and impede global economic growth. For example, the ongoing trade tensions between the United States and China have sent shockwaves through financial markets, raising concerns about a potential global economic downturn.

Within the international retail sector, Walmart plays a crucial role. Its sheer size and global presence allow it to purchase goods from suppliers at lower prices due to economies of scale. This enables Walmart to offer more competitive prices to consumers. Especially in China in the early part of the 20th century, Wal-Mart was far ahead in retailing. Wal-Mart's ability to offer consumers more competitive prices was made possible by the fact that more than 95% of the goods in its stores in China were made in China and by the fact that Wal-Mart was able to make high profits by establishing global sourcing centers in China where it purchased Chinese goods in large quantities at low prices and sold them globally at high prices [1]. The company is also known for its efficient supply chain management, investing in technology to optimize inventory, reduce costs, and streamline distribution. Walmart operates various retail formats, including supercenters, discount stores, community markets, and Sam's Clubs, catering to a wide range of customer needs and demographics.

Costco, based in Issaquah, Washington, is synonymous with value shopping. Its membership model allows customers to purchase a wide array of products, from groceries to electronics, at wholesale prices. As of 2021, Costco operates over 800 stores worldwide.

The global reach of retail giants like Walmart and Costco should not be underestimated. With their extensive supply chains, efficient distribution networks, and strong purchasing power, they significantly influence the dynamics of international trade. These companies source products globally, impacting the economies of many countries, and their direct negotiations with suppliers affect global pricing and product availability.

As exploring the complex realm of trade wars and delve into the business models, market shares, and customer bases of global retail giants such as Costco and Walmart, we reveal the critical role these companies play in shaping the landscape of international commerce.

2. Trade War's Toll on Retail

Trade wars have a multifaceted impact on the retail sector, affecting it in several ways.

2.1. Cost Escalation and Consumer Impact

Trade wars increase the cost of importing goods due to tariffs and trade barriers. Retailers are then faced with a difficult choice: either absorb the additional expenses or pass them on to consumers. As Sarah F. Thorn, a senior director for global government affairs at Walmart, pointed out in a letter to the U.S. Trade Representative, "This round of tariffs could impact a significant number of common consumer items that are not easily replaceable." Thorn emphasized that "Walmart and our suppliers will pay the cost of increased duties, which are simply taxes levied on products at the border... As a result, either consumers will pay more, suppliers will receive less, retail margins will be lower, or

consumers will buy fewer products or forego purchases altogether." It is important to note that these tariffs do not necessarily address complex trade challenges like intellectual property or trade secrets. Thus, such tariffs on consumer goods may lead to higher prices, affecting consumers' purchasing power and potentially reducing their willingness to spend [2].

2.2. Supply Chain Disruptions and Uncertainty

The uncertainty surrounding trade policies disrupts retailers' supply chain management. This uncertainty makes it challenging for retailers to plan and invest in their supply chains efficiently. As a result, supply chains become less predictable and more costly. As pointed out by a report from Carnegie Endowment for International Peace, "Regardless, a drop in imports from China only actually reduces U.S. reliance on China if companies manage to find viable substitutes. But last year, the United States was not able to fully meet the need for alternatives to Chinese merchandise. Strong overall GDP growth in 2019 suggests that total imports would likely have increased without tariffs." This illustrates the disruptive nature of the trade war's uncertainty on retail supply chains, where finding reliable alternatives to Chinese goods has proven to be a challenge [3].

2.3. Economic Consequences: According to the National Bureau of Economic Research (NBER)

The current trade war has had significant economic consequences, particularly concerning its toll on the retail sector. NBER's research highlights that tariffs imposed during trade conflicts result in higher prices for consumers and reduced income for retailers, ultimately leading to job losses in the industry. This aligns with the observation that trade wars increase the cost of importing goods due to tariffs and trade barriers, a challenge that retailers often confront. Therefore, the economic repercussions of trade wars on the retail sector are evident, as supported by the NBER's findings [4].

In conclusion, trade wars undeniably disrupt the retail industry, presenting significant challenges such as cost escalation, supply chain disruptions, and heightened uncertainty. These challenges are vividly illustrated by real-world instances like the U.S.-China trade tensions, which underscore the hurdles confronting global retailers. Furthermore, the adverse effects extend beyond the retail sector to encompass the broader global economy.

In light of these consequences, it is imperative for governments and businesses to proactively seek solutions to mitigate these negative impacts. Striving for equilibrium in the global trade landscape becomes paramount, as trade wars disrupt not only retail but also the broader economic fabric, necessitating a comprehensive examination of their implications on global commerce.

3. Navigating Turbulence: Engaging in Trade Policy Advocacy

Some global retailers are actively engaged in trade policy advocacy, working with governments and international trade organizations with the aim of shaping the direction of trade policy while mitigating the adverse impacts of trade wars. Examples of this active engagement are described in Sourcing Journal and BBC are glimpsed in reports, particularly in the United States, where retail giants have actively called on the administration to revisit its tariff policies against Chinese goods [5,6].

The retail industry has been focusing on the challenges associated with the trade war and communicating their concerns and recommendations to policymakers through retail trade associations and major retailers. These retailers have emphasized the importance of finding a diplomatic solution, continuing to preserve the openness of the marketplace, and ensuring that trade actions do not unduly harm U.S. businesses and consumers. At the same time, in an effort to mitigate the burdens imposed by the tariffs, these industry groups have been working to expand their sourcing strategies and actively explore alternative suppliers and regions.

The goal of these actions is to ensure supply chain flexibility and sustainability to better respond to an increasingly volatile trade environment. Retailers generally believe that high tariffs will lead to higher commodity prices and undermine consumers' purchasing power. As a result, they have focused on calling on the government to take measures to reduce the burden of tariffs.

All in all, the retail industry has demonstrated a proactive stance in addressing the challenges posed by trade wars. Through interaction with the government and international trade organizations, they have attempted to influence trade policies to safeguard the interests of the industry as well as to protect consumer rights. This action also fully demonstrates the retail industry's strong commitment to maintaining open markets and resolving trade issues. While these efforts may take time to have a noticeable impact, they have a positive effect on policymaking. The voice of the retail industry is increasingly valued in trade policymaking, and governments and international trade organizations are increasingly willing to listen to the advice of retailers. These efforts are expected to mitigate the adverse impacts faced by the retail sector in the future and contribute to a fairer and more profitable trading environment.

4. Implications for International Trade Norms

4.1. Shaping International Trade Norms Through Sustainability Initiatives

Global retailers are key players in international trade, and their business practices set important precedents. By examining their strategies, approaches, and engagement in international trade, we can gain insights into the evolving norms and rules governing global commerce. Their influence extends to areas such as supply chain sustainability, labor practices, and ethical sourcing, all of which contribute to shaping international trade norms.

A compelling example of global retailers influencing international trade norms is Walmart's leadership in sustainability. As one of the world's largest retailers, Walmart introduced an ambitious sustainability program, committing to making its supply chain more sustainable by setting targets to reduce greenhouse gas emissions and improve energy efficiency. This program has had a cascading effect on the entire retail industry, pushing suppliers to adopt more sustainable practices. Walmart's efforts have been instrumental in reshaping the norms of sustainable supply chain management, influencing global trade practices [7].

4.2. Broader Implications for Global Trade Governance

The influence of global retailers goes well beyond shaping specific trade norms. It extends to the broader landscape of global trade governance. These retailers have become powerful stakeholders in international trade discussions. They often engage with governments and international organizations, advocating for policies that align with their interests and the principles they uphold, such as sustainability and fair labor practices. By doing so, they contribute to a more profound transformation in the global governance of trade. Their active participation in international trade discussions helps guide the formulation of trade agreements, sustainability standards, and labor rights enforcement, thus fostering a more balanced and ethically conscious global trade governance framework.

4.3. Balancing Corporate Interests and Societal Values Within Trade Norms

One of the central challenges in the modern trade landscape is balancing corporate interests with broader societal values. Global retailers navigate this complex terrain, often facing choices that have implications beyond their balance sheets. These choices encompass a variety of issues, including ethical sourcing, labor conditions, and environmental sustainability. The decisions made by retailers in this regard have significant ripple effects on international trade norms. When retailers prioritize

societal values and integrate them into their supply chain strategies, they push for a recalibration of trade norms to be more aligned with ethical and sustainable practices. This ongoing rebalancing reflects the growing importance of ethical consumerism and corporate social responsibility in shaping international trade norms.

4.4. Global Retailers As Norm Entrepreneurs

Global retailers can be considered as "norm entrepreneurs" in the field of international trade. Their innovative approaches to conducting business and their dedication to upholding high ethical and sustainability standards often drive the development of new international trade norms. By setting an example and demonstrating that successful business practices can coexist with ethical principles, they encourage other businesses and industries to follow suit. In essence, global retailers serve as pioneers in developing trade norms that are more in line with contemporary global challenges, such as climate change, labor rights, and responsible sourcing. They contribute to a positive shift in trade norms, thereby making the global trade landscape more equitable and sustainable.

In conclusion, the influence of global retailers in shaping international trade norms is multifaceted. Through their actions, advocacy, and engagement, they directly impact the norms and rules governing global commerce. Their influence extends to broad discussions of global trade governance, balancing corporate interests with societal values, and acting as catalysts for innovative and ethical trade norms. As we consider the changing dynamics of international trade, understanding the role of global retailers becomes increasingly essential, as they play a pivotal part in shaping a more ethical, sustainable, and balanced global trade landscape.

5. Balancing National and Corporate Interests

The intricate interplay between national interests and corporate interests in the realm of international trade policy is a topic of immense significance and complexity. It delves into the dynamic equilibrium that governments must strike to safeguard domestic industries and employment while simultaneously facilitating the prosperity of global businesses and ensuring the seamless flow of international trade. This multifaceted issue necessitates a comprehensive analysis that explores various dimensions.

5.1. Intersection of National and Corporate Interests

The intricate interplay between national interests and corporate interests in international trade policy is a topic of immense significance and complexity. As exemplified in a comprehensive study by Evren Köksal, titled "The Impact of Multinational Corporations on International Relations", multinational corporations (MNCs) have become integral actors in the international political scene, and their influence on nation-states cannot be ignored. The study emphasizes that MNCs have gained considerable political and economic power, evident in their substantial turnovers, production capabilities, and even their presence within governmental institutions. In this context, it is evident that nation-states are no longer acting alone, and they are compelled to share their "structural power" with non-governmental actors, primarily MNCs. This underscores the necessity of achieving a delicate equilibrium between safeguarding national interests and promoting global economic growth [8].

5.2. Challenges and Conflicts: The Complexities of Trade Sanctions

In 2022, the world trading system faced considerable uncertainty, particularly in the context of global trade sanctions. Serious institutional questions revolving around the proper functioning of the World Trade Organization (WTO) remained unresolved, possibly intensified by geopolitical pressures. The

WTO, which was once viewed as a model for international trade agreements, faced significant challenges. Notably, the organization's Appellate Body, a critical component for dispute resolution, remained without any members and inoperable. Throughout the year, individual WTO Members encountered a multitude of challenges. These included grappling with issues like inflation, unequal income distribution, poverty, and the global health crisis. In response to these challenges, countries worldwide adopted national programs that seemed to be at odds with their commitments to the multilateral trading system. Concepts like "near shoring," "national industrial policy," and "national content requirements" posed significant challenges to the fundamental principles of the multilateral trading system. These principles encompass non-discrimination, national treatment, and negotiated tariff bindings. Historically, these principles had significantly contributed to the globalization of supply chains. However, the emergence of these new concepts threatened to disrupt established norms [9].

As governments strive to reconcile these competing interests, they may explore various policy frameworks. These frameworks encompass a spectrum of approaches, from protectionism to liberalization. Policymakers must carefully consider the potential impacts on national industries, employment, and global economic stability. Striking the right balance may involve measures like opening markets to foreign competition, adjusting tariffs, and reforming global trade regulations. These policy choices are fundamental in navigating the fine line between safeguarding national interests and promoting global economic growth.

5.3. International Cooperation and Multilateralism

In the intricate realm of international trade, the imperative of international cooperation and multilateralism stands as a cornerstone for addressing the multifaceted challenges arising from the interplay of national and corporate interests. It underscores the necessity for nations to engage in collaborative diplomacy, forging alliances and consensus to navigate the complexities of international trade effectively.

The intersection of national and corporate interests gives rise to an intricate web of trade policies, tariffs, and regulations that necessitate international collaboration. In a world increasingly characterized by global supply chains and interconnected economies, the actions of one nation can have far-reaching consequences. Multinational corporations, integral to global trade, further underscore the need for coordinated efforts.

International cooperation and multilateralism serve as mechanisms for resolving disputes, facilitating trade negotiations, and promoting global stability. Collaborative endeavors empower nations to mitigate the adverse impacts of protectionist measures and trade conflicts, fostering an environment conducive to economic growth. Institutions like the World Trade Organization (WTO) play pivotal roles in setting the rules for global trade and providing platforms for dispute resolution.

By coming together, countries can develop effective solutions that strike a balance between safeguarding national interests and advancing global economic stability. Recognizing that the challenge of balancing national and corporate interests is not a zero-sum game, but rather an opportunity for nations to embrace a more interconnected and interdependent global economy, is central to the principles of international cooperation and multilateralism.

In summary, international cooperation and multilateralism are indispensable elements for harmonizing national and corporate interests in international trade. They provide a framework for navigating the complexities of the global trade landscape while fostering mutual benefits and global prosperity. As nations grapple with the intricacies of international trade, collaborative diplomacy and shared objectives offer a pathway to address challenges and seize opportunities in the evolving global economy. International trade in today's interconnected world is not merely a matter of individual

interests but a symphony of cooperative diplomacy essential for sustaining the intricate global trade order.

6. Setting Precedents and Inspiring Innovation

Global retailers, often at the forefront of international trade, possess the unique capacity to set precedents for trade resilience and inspire innovation across various industries. Their experiences and strategies in navigating the complex landscape of global commerce can serve as valuable lessons for businesses worldwide. This section delves into the profound influence these retailers have on trade practices, their role as pioneers, and the long-term impact of the precedents they establish.

6.1. Pioneering Trade Resilience

Global retailers frequently find themselves on the frontline of trade disruptions, be it in the form of trade wars, supply chain vulnerabilities, or unforeseen crises such as pandemics. Their ability to adapt and navigate these challenges positions them as pioneers of trade resilience. These companies have a history of implementing innovative solutions to address supply chain disruptions, demonstrating the adaptability necessary to withstand economic turbulence and uncertainty.

6.2. Lessons from the Frontlines

The strategies employed by global retailers to mitigate trade risks offer invaluable lessons for businesses across diverse industries. As trailblazers in trade resilience, they serve as catalysts for innovation by demonstrating the effectiveness of diversifying sourcing strategies, identifying alternative suppliers, and embracing digital technologies. These insights extend beyond the realm of retail and are applicable to sectors with complex global supply chains, actively promoting agility, risk mitigation, and innovation as integral components of a robust trade strategy.

As articulated by Yao, Suman, and Kohli (n.d.) in their study, it is imperative for enterprises to gain an in-depth understanding of global manufacturing trends and emerging regions, facilitating a more comprehensive comprehension of potential risks and opportunities. The authors also underscore the significance of analyzing how competitors are addressing trade-related issues, a critical element in enabling companies to formulate flexible supply chain strategies. Moreover, the establishment of supply chain agility stands as a pivotal means of proactively addressing future trade risks [10].

6.3. Long-Term Impact

The precedents set by global retailers have a profound and lasting impact on international trade practices. Their innovative approaches to supply chain management, risk mitigation, and global expansion continue to shape the landscape of global commerce. As businesses observe and learn from these trailblazers, the adoption of resilient trade strategies becomes increasingly widespread. Consequently, this results in a long-term transformation of trade practices, emphasizing the importance of resilience and adaptability in the face of global challenges.

6.4. Cross-Industry Inspiration

Beyond the retail sector, the influence of global retailers extends to other industries. Their ability to drive innovation by addressing trade-related challenges inspires various sectors to implement resilient and agile strategies. This cross-industry inspiration fuels the development of advanced technologies, supply chain solutions, and risk mitigation practices, impacting sectors as diverse as manufacturing, technology, and healthcare.

In conclusion, global retailers serve as pioneers in the field of trade resilience, setting precedents and inspiring innovation that reverberates across industries. Their ability to adapt to disruptions and navigate complex trade environments offers valuable insights for businesses aiming to enhance their own trade resilience. The long-term impact of their precedents is a testament to the transformative power of adaptability and innovation in the realm of international trade. As businesses worldwide draw inspiration from these trailblazers, a more resilient and agile global trade ecosystem emerges, fostering growth and stability in the face of adversity.

7. Conclusion

The role of global retailers in international trade is continuously evolving, and this essay has shed light on several critical dimensions of this transformation. The key takeaways from our exploration of this subject reflect the intricate interplay between trade wars, retail resilience, global supply chains, trade policies, and the broader economic landscape.

First and foremost, it is clear that trade wars disrupt the retail sector on multiple fronts. Increased tariffs raise the cost of importing goods, forcing retailers to make difficult choices regarding cost absorption or passing expenses on to consumers. The result is an environment where prices on various products may increase, and consumers and businesses alike must adjust to new economic realities.

Furthermore, the disruption of supply chains poses another significant challenge for the retail industry. These chains, often intricately woven across borders, face disruptions, delays, and uncertainties due to trade disputes. Global retailers are compelled to diversify sourcing strategies, mitigate risks, and find alternatives, all of which come at a price, both in terms of costs and logistical complexity.

This disruption's economic consequences are significant, with research and reports underscoring the adverse effects on retail businesses, consumers, and employment within the industry. Trade wars not only affect the retail sector but also have a broader impact on the economy, leading to job losses, impacting consumer purchasing power, and affecting economic growth.

However, amidst the turmoil, global retailers have not remained passive. They have actively engaged in advocating for trade policies that address the challenges posed by trade wars. Retail trade associations and major companies have voiced concerns and recommendations to policymakers. They emphasize the importance of finding diplomatic solutions, maintaining open markets, and ensuring that trade actions do not disproportionately harm American businesses and consumers. This advocacy is driven by the understanding that high tariffs harm consumers' purchasing power and has motivated retailers to engage in dialogue with governments to influence policy directions.

The ability of global retailers to set precedents in trade resilience and inspire innovation has also been showcased. As pioneers in trade resilience, their strategies for mitigating trade risks offer valuable lessons for businesses across industries. The long-term impact of their precedents reverberates across global commerce, emphasizing the significance of adaptability and innovation in the face of challenges.

In conclusion, the retail sector's evolution within the realm of international trade remains a dynamic and multifaceted process. As the global landscape continues to shift, the role of retailers becomes increasingly pivotal, not only in navigating disruption but also in influencing trade policies and fostering resilience and innovation. This essay highlights the importance of ongoing examination and dialogue in understanding these dynamics. As the retail industry continues to adapt to the ever-changing trade environment, it is imperative for governments and businesses to seek a harmonious equilibrium in the global trade landscape--one that balances national interests with corporate interests, fosters trade resilience, and sets precedents for a more resilient and agile global trade ecosystem.

The dynamics explored here represent an ongoing narrative, and the discussion should persist, informing policy decisions and business strategies. The evolution of the retail sector in international

trade is a story still in the making, with each chapter offering valuable insights and lessons for an increasingly interconnected and interdependent global economy.

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The Dilemma of Workers' Rights and Its Legal Protection: Based on the Background of Economic Globalization

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Abstract: With the deepening of economic globalization, its impact on labour law has attracted increasing attention, bringing with it both opportunities and challenges, and this article focuses on some of the issues that arise. Based on the Rana Plaza collapse case in 2013, the authors use a combination of economic and legal literature to analyse the causes and consequences of failing to address three issues: unfair treatment, supply chain expansion, and the new form of work, “gig work”. The study found that the causes of the three problems are strongly related to the neglect of labour rights by multinational enterprises in the pursuit of maximum profits in a globalized economy. If the world does not address this in a timely manner, it will have a significant negative impact on labour mobility and on the future of labour-enabled economic development. The paper therefore suggests that countries can achieve a healthy and sustainable workforce by strengthening international cooperation, leveraging the role of international organizations while empowering civil society trade unions, and continuously improving labour laws, thereby contributing to sustainable economic development and social justice.

Keywords: Law, economic, globalization, social problem

1. Introduction

With the deepening of “globalization”, a powerful force has facilitated the integration of countries in many areas, including the economy, capital and technology, a phenomenon commonly referred to as “economic globalization”. This theme is gradually becoming a hot topic of discussion on the world stage, so is this trend good or bad? According to Gupta, the above trends present great opportunities for global development, however, at the same time, challenges that cannot be ignored also arise [1]. In order to satisfy revenue maximisation, multinational corporations are often desperate for the lowest cost, and they shift production to countries with lower labour costs. This transfer, while providing jobs and generating significant returns for companies, often ignores the rights of the majority of workers, not only in terms of unreasonable labour remuneration but also in terms of their health and lives. A stark case in point is the Rana Plaza building collapse that occurred in Bangladesh on 24 April 2013, when an eight-storey commercial building collapsed, killing and injuring a very large number of people. Through a full 17 days of rescue and search, 2,438 people were evacuated, but over 1,100 people lost their lives forever, with multiple parties expressing concern following the incident [2]. Learning from this sad lesson, the authors will

discuss in detail in this paper on the four issues identified from it. Firstly, in this case, the treatment of workers in terms of protection of their rights and interests (especially in terms of safety standards) was grossly unfair compared to developed countries, and the safety of workers was absolutely disregarded; Secondly, many international brands under globalization are manufactured in Bangladesh, but the expansion of the supply chain has led to disruptions in employment relations; Furthermore, the tragedy has exposed the difficulties of cross-border regulation that make it easier for transnational corporations to avoid legal liability in underdeveloped countries; Lastly, the rise of non-traditional forms of work (gig work) has given rise to new problems not covered by previous legislation. Focusing on the pressures of economic globalization on labour law, it seeks to shape healthier and more sustainable international labour relations, starting with the problems exposed above.

2. Analysis on the Problems

2.1. Types of Fundamental Labour Rights

2.1.1. Human Rights

First of all, laborers, as human beings, have the most basic human rights enshrined in the Universal Declaration of Human Rights, namely, the fundamental right to liberty and security of the person, the right to life, and employment, remuneration for work, culture and education.

2.1.2. Labour Law

In China, for example, article 12 of the Labour Law, among others, stipulates that workers have the right to equal employment; Articles 10, 14 and 82 provide for the right of workers to conclude written labour contracts; The Labour Code also provides for the rights of workers to remuneration, benefits, rest and leave; they have the right to maintain stable labour relations and enjoy labour protection.

2.1.3. Tendencies

With the development of society, the third and even the fourth generation of digital human rights are hotly debating the right to development for all in the context of economic globalization, stressing that the right to development of labour includes both individual and collective components. From the United Nations Declaration on the Right to Development, it is clear that the right to development is a fundamental and inalienable right. From one generation to two to three and four, it is easy to see that labour rights have become increasingly comprehensive and well-established.

2.2. Unfair Labour Rights

The author argues that in the global economy, labourers from different countries suffer unfairly. According to the International Labor Organization, due to the different national conditions and economic development of different countries, although there are national labour laws governing minimum wages, maximum working hours, etc. to safeguard labour rights and interests, and these laws are intended to protect workers from exploitation and enjoy fair treatment, these standards (minimum wages) actually vary greatly among different countries in the global context [3]. For example, in the case of China, according to article 36 of the Labour Law of the People's Republic of China, normal working hours shall not exceed eight hours per day and 40 hours per week, and overtime pay shall be paid for any excess. The Bangladesh Labour Act, on the other hand, sets the standard weekly working hours at 48 hours, beyond which overtime is payable. In the case above,

the minimum wage in Bangladesh is one of the lowest in the world, which has attracted countless multinational apparel brands to produce in Bangladesh because of the significantly lower labour costs compared to producing in China or in the brand's home country, which is mostly a number of developed countries. In addition, as an underdeveloped country, Bangladesh has very weak labour regulation and weak enforcement of labour laws, and multinational corporations suppress trade union activities by offering jobs, making it difficult for workers to take the initiative to defend their rights without due protection. Moreover, in reality, apart from the two obvious subjects, namely enterprises and workers, labour rights and interests, there is also the implicit influence of the government. Bangladesh's textile and garment industry was its largest export sector, and the national Government was very welcoming and supportive of multinational enterprises and hoped to attract more foreign investment. In order to maintain their competitiveness in the global market, their governments may sometimes sacrifice labour rights and interests, especially in terms of wages and hours of work, working conditions, and so on. These unfair treatments will lead to many problems in the long run. For laborers, long working hours and inappropriate working environments can increase the risk of work-related injuries and occupational diseases and even the tragic mass casualties mentioned above; For the society, labour discontent has been accumulating, as in 2010 when a number of Foxconn employees jumped to their deaths within a short period of time after being overwhelmed by the pressure of intense work and unimpressive pay and benefits [4]. They may start protests or even strikes, which seriously affects social stability and the economy. According to Keynes, ensuring that workers are paid a fair wage increases their purchasing power, which in turn stimulates demand and the economy [5]. It is difficult to avoid the problem of inefficiency for companies with high-pressure laborers who use their inaction as a silent protest against unfair treatment by the companies. In the long run, not only will a company's low productivity affect its profitability, but its international reputation will naturally be affected as well, which is detrimental to a company's healthy long-term development.

Indeed, even if TNC (hereinafter referred to as "TNC") meet the minimum wage in the developing countries where they produce, it does not mean that the wages are sufficient to sustain the daily lives of the workers. Minimum wages are often determined by tripartite negotiations between the Government, trade unions and employers, in which, as studies have shown, trade unions are weak and constrained by the other two parties, and workers' interests are neglected. Coupled with the fact that the reality of development is always inflationary, wages that have not been adjusted for a long period of time will also greatly increase the pressure on workers' living expenses and reduce their purchasing power.

2.3. Global Expansion of the Supply Chain

2.3.1. Subcontractor

In traditional labour law, labour relations focus only on the relationship between the direct employer and the employee, and the responsibilities of subcontractors in the supply chain are not sufficiently clearly defined. In the process of economic globalization and the global division of labour, developing countries such as India and Vietnam are often responsible for labour-intensive and less technologically demanding work, so enterprises often expand their supply chains to minimize costs and maximize profits to maintain their competitiveness globally, which is often referred to by transnational corporations (TNCs) as supply chain optimization. In addition, the expansion of the supply chain is not only for the purpose of production, it enables TNCs to better understand the culture and consumption habits of various regions, which will help them in possible market expansion in the future, and invariably expand the consumer market. It is for these reasons above that this trend is gradually coming into view. Yet this new, optimized way of doing business

poses new challenges for labour law. As ILO's report Decent Work in Global Supply Chains points out, many workers are subjected to rights violations in expanding supply chains, especially in manufacturing, agriculture, etc [6]. Expanding supply chains bring ambiguous employment relationships. Firstly, it is impossible to find the responsible party to bear the workers' rights and interests, and secondly, if labour disputes arise, not only is it very difficult to regulate the labour law, but it is also difficult for workers to find the real party responsible for them, and it is difficult for them to defend their rights.

2.3.2. Cross-border

At the same time, the expansion of the supply chain not only involves difficulties in defining the responsibilities of various subcontractors, but also inevitably crosses several countries. For example, if a Thai suffers a work-related injury in a factory in Vietnam, where should he turn to to defend his rights and claim for compensation? Furthermore, there is a lot of resistance to enforcing labour law regulation in the country due to cross-border. There are multiple reasons for this, starting with the sovereignty issues involved between countries; cross-border regulation is a politically sensitive issue, and national regulators cannot come and go as they please and act without pressure on another territory unless there is a specific agreement between the parties. Secondly, even if it is enforced, due to the distance, it is more convenient for enterprises to conceal the information, and it is difficult to obtain complete and timely evidence in the process of defending rights or regulation. Furthermore, due to language and cultural issues, there is more room for play and increased difficulty in interpreting labour laws. In addition to triggering the various consequences in 2.2.1, all this would be very detrimental to the long-term development of the global market as a whole. As a result of the rights and benefits problems mentioned earlier, regulation is suffering and it is even more difficult for workers to defend their rights, and so on and so forth, the voice of cross-boundary labour disputes is getting louder and louder, and the mobility of workers will be weakened, and they will be inclined to avoid which countries they are going to.

2.4. The Rise of Non-traditional Forms of Work

With the globalization of the economy and the rapid development of various industries, in addition to the optimization of the supply chain as mentioned in 2.2, a new form of work called "Gig Economy" has also emerged [7]. One of the main reasons for its emergence is closely linked to the expansion of the supply chain, which has given rise to the economy of casual labour, as optimized forms of work are more considered flexible and efficient and traditional forms of work are unable to meet this demand. Secondly, the instability of the global economy, for those who are employed, has led to an increase in unemployment, both in the financial crisis of 2008 and later in the new crown epidemic. In order to survive, many people will choose the odd job economy to support their lives; For companies, which continue to improve their global competitiveness in response to the economic situation, the use of casual labour reduces long-term fixed costs while combining flexibility with the use of traditional permanent jobs. Moreover, as the relevant labour regulations for casual workers are not yet clearly regulated, multinational companies have room for flexible manipulation. Finally, economic globalization has increased the mobility of the global labour force, providing a wide range of job opportunities and adequate conditions for workers to choose casual work as a form of work. The economy of casual labour can be regarded as a natural product in line with the development of the times, but for workers, it infringes on their rights and interests while providing employment opportunities. Traditional labour law, which focuses on full-time and permanent employment relationships and provides protection for workers' rights and interests, is therefore overstretched in the face of the casual economy. A form of work such as casual labour is in an

ambiguous work situation, not being a traditional employee nor a freelancer. Many odd-job platforms use this to pass the buck, refusing to recognize the employment relationship and describing it instead as a business partnership. It is difficult for workers to obtain a guarantee of their rights and interests. Article 16 of the Labour Law of the People's Republic of China stipulates that an employer and an employee must conclude a written labour contract specifying the rights and obligations of both parties. However, the contracts signed by casual laborers are often short-term and simple contracts that do not include insurance, bonuses and other benefits. The challenge to traditional labour law posed by the zero-work economy is bound to have serious consequences if not properly addressed. The prolonged lack of protection for the rights and interests of casual workers, who are under great pressure both economically and psychologically, may lead to social instability and reduce the purchasing power of this sector of the population, which, in turn, has a negative impact on both the economy and society.

3. Suggestions

3.1. Strategies for Mitigating Unequal Rights and Benefits

3.1.1. Help from International Organizations

As entitlement standards differ from country to country (e.g. minimum wage), in the case of the minimum wage, an international organization could take the lead (e.g. UN, ILO, WTO, Fairtrade International ...) to Establish a globally applicable minimum wage standard. As shown by Virginia , international organizations have a wealth of financial, intellectual and statistical resources, including databases (TiVA, EORA, AMNE), which have the capacity not only to generalize and compare a large amount of macro- and micro-data, but also to carry out “ground-breaking” research, whereby minimum wage standards need to take into account, in an unbiased manner, the cost of living in each country, the global economic environment and so on. International organizations are well placed to help in this task globally [8]. In addition, in the process of discussion, one party should not dictate the standard-setting, but the state, enterprises and trade unions should discuss jointly. In order to avoid one party dominating, international organizations should pay attention to give more power to trade unions when organizing the discussion, and publish the results of the discussion after the preliminary discussion to show to the whole world, in order to collect the opinions of all countries to make further reasonable improvement. There are precedents for this approach and ILO has developed several international conventions related to labour rights and interests, such as the Minimum Wage Fixing Convention of 1970, the Convention concerning the Abolition of Forced Labour of 1957, the Convention concerning the Worst Forms of Child Labour of 1999, and so on. While the implementation of these conventions varies from country to country, they provide a basis for the development of global standards. In addition, the European Union (EU) has included social clauses in trade agreements with certain third world countries, and signatory countries are required to raise wage standards and improve labour conditions. This task requires full global co-operation and active participation in the pursuit of an appropriate standard.

3.1.2. Empowering Civil Society Organizations such as Trade Unions

Enhancing the power of regulation by strengthening the rights of civil society organizations such as trade unions and increasing their voice, and raising the minimum wage to ensure that workers' rights are protected. From previous experience, these civil society organizations have the inherent advantage of keeping an eye on workers' dynamics and being more responsive to workers' needs, as in the case of the “fair trade” movement, where consumers' choices and pressures were used to force companies to improve the treatment of workers.

3.2. Cross-border Supply Chain Labour Rights

3.2.1. Supply Chain Issues

Expanded supply chains, where the responsibilities of multiple “employers” are not clearly defined, need to be made more transparent. As report showed that increased transparency in the supply chain signals ethical production, and nowadays consumers are demanding more ethics from companies, and increased transparency can increase competitiveness for companies. Companies should proactively disclose the composition of the supply chain, the process of supply, so that workers understand who they are responsible for [9]. Previously, companies such as Apple have proactively published lists of suppliers on their official websites and regularly publish relevant social responsibility reports. In addition, some countries, such as the United Kingdom, have enacted the Modern Slavery Act, which requires companies to disclose risks to labour rights in their supply chains and the measures taken to clarify supply chain responsibilities. As well as the U.S. California-Fort Worth Supply Chain Transparency Act of 2012, and the EU’s Non-Financial Reporting Directive of 2014, all of which are human rights due diligence legislation based on disclosure obligations. The human rights due diligence process, which requires companies to identify, prevent, mitigate and account for human rights risks, can monitor companies’ improved behaviour to prevent human rights abuses. However, it has to be noted that corporate disclosures need to be verified by a third-party independent auditor to ensure authenticity.

3.2.2. Transnational Issues

In order to resolve the difficulties posed by cross-boundary, it is actually most important to strengthen international co-operation. Given the multinational nature of TNC operations, it is clear that regulation by a single national legal system is not sufficient. At this point, it is necessary to rely on international organizations to play an important role, and they can issue agreements to give guidance to laborers in defending their rights across the border, as well as providing a basis on which laborers can be justified. Strengthening the enforcement of these agreements could put greater pressure on transnational corporations as a means of safeguarding labour rights.

3.3. Reinventing Labour Security in the Casual economy

3.3.1. Improvement of Labour Laws

The author argues that countries should adjust and update their labour laws to ensure that casual workers have the rights and benefits they deserve. In order to avoid the problem of platforms shirking their responsibilities and making excuses, as mentioned in 2.3 above, perhaps States could consider recognizing a new type of work, a “third type of work”, which would legitimize the recognition of casual workers and change the public perception completely. This way everything about the standards for casual labour can be clearly defined, drawing on traditional permanent employees, such as a suitable minimum wage, casual labour benefits and so on.

3.3.2. Strengthening Training

Many of the casual laborers have low skill levels and the economic level is not very promising. In order to fundamentally change this issue, According to a White House briefing, the government should undertake skills training in small businesses such as hotels and retail as an incentive to help millions of low-wage workers, empowering the casual laborers themselves and strengthening their competitiveness in the marketplace [10].

4. Conclusion

Through its research, this paper finds that with the increasing integration of the global economy, the relationship between multinational corporations and labour has undergone major changes that have directly impacted the framework and implementation of labour law. In this article, the author identifies three main challenges to labour law arising from economic globalization: unfair labour rights between countries, the global expansion of supply chains, and the emerging form of work known as “Gig work”. The essence of labour law is to safeguard the rights and interests of workers, so with regard to the first issue, the authors believe that national cooperation should be strengthened and international organizations should be used to accomplish a uniform standard that is agreed upon by the whole world. At the same time, civil society organisations should be empowered to give trade unions a greater voice in fighting for the rights of workers and ensuring that they are treated fairly; For supply chain issues, this paper argues that transparency should be increased or even companies should take the initiative to disclose their suppliers and be audited by relevant independent organizations. The transnational challenge is also to strengthen international cooperation to make the cross-border enforcement of labour laws more feasible; Finally, with regard to the problems posed by casual labour, the authors’ study concludes that labour laws should be updated in this regard and that the government could organise free training to improve the skills of casual workers. These studies identify the challenges of labour law in the context of a globalized economy and offer sound advice on how to shape a healthy and sustainable employment relationship for the betterment of the global economy. For the future, only by constantly strengthening international cooperation, maintaining justice and constantly improving labour laws will the world be able to ensure that the rights and interests of workers are truly safeguarded and that sustainable economic development is achieved. The author believes in a better future for the world.

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On the Feasibility Analysis of Introducing Foreign Capital into Education, Medical and Other Industries

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Abstract: Because there are huge differences between Chinese and Western ideology and cultural development, but the current trend of economic globalization is irrecontradicable, so it is helpful to introduce foreign investment while insisting on domestic enterprises going global. However, when introducing foreign investment, it is inevitable to encounter many problems, such as not being controlled by the Chinese government or being too strong in foreign investment, which will drive our domestic enterprises to the brink. At the same time, these foreign investments can play their role in China's land and promote its economic development. This requires the rulers to formulate a package of fair and effective policies to promote its development. The two major fields of education and healthcare are related to the ideology and physical health of the people, and therefore are the foundation and foundation of the country. In order to ensure the long-term prosperity of the country and social stability, it is necessary to attach great importance to the guidance of these two aspects. It is necessary to consider the entry of foreign investment into China as a good thing. Meanwhile, it is a good way to allow foreign investment to play a positive role in promoting technological change and capital flow in these two fields. At the same time, it is necessary to control the power of capital and not let it control the foundation of our country, as this will shake national security.

Keywords: Foreign investment, education, medical care, cultural differences, national security

1. Introduction

With the development of globalization, foreign investment has played an important role in China's economy. Especially in education and medical industry. The introduce of education and medical brings both opportunities and challenges. This paper will discuss the role of foreign investment during the Chinese education and medical industry. Analyzing the way to attract foreign investment in the condition of ensuring Chinses local companies cultural independent. This paper will discuss the main point in four parts. First, examine the impact of foreign investment on the education and medical sectors. Second, exploring the ways to strengthen intellectual property protection and enhance regulatory measures. Third, exploring party building and government cooperation in foreign-funded enterprises. Fourth, exploring the prospects and challenges of foreign capital introduction in China's education and healthcare sectors. Through these analyses, this paper will reveal the role of foreign investment in China's education and healthcare sectors. Providing useful insights for future development.

2. Formulate a Good Foreign Investment Policy

When foreign businessmen entered China, foreign investors were "non-home operations" in China. For these guests, we should show sincerity to attract them. Now with the development of China's economy, our labor costs are very different from those of 10 years ago. Therefore, investors in many countries will transfer the projects they originally planned to invest in China to those countries and regions in Southeast Asia with lower labor costs in order to reduce costs. So how can we attract these hesitant foreign investors to firmly choose our country again? In my opinion, we need to formulate open and friendly regulations and policies to provide more opportunities for foreign investors. This includes relaxing restrictions on foreign investment access, providing tax incentives, reducing the difficulty of administrative examination and approval, and ensuring the protection of intellectual property rights to improve the investment environment.

2.1. Relaxation of Restrictions on Foreign Investment

The Vice Minister of Commerce recently said at the regular policy briefing of the State Council that the overall scale of China's utilization of foreign capital is expected to be flat in 2016 and 2015, the structure will be further optimized, and the investment environment will continue to improve. In terms of expanding opening up to the outside world, the restrictions on foreign investment in the service industry, manufacturing and mining industries will be greatly relaxed by revising the Catalogue of Foreign Investment Industry Guidance and relevant policies and regulations. The policy measures of the "Made in China 2025" strategy are equally applicable to domestic and foreign-funded enterprises, and foreign investors are encouraged to invest in high-end manufacturing, intelligent manufacturing and green manufacturing industries. Support foreign capital to participate in infrastructure construction in the form of franchising in accordance with laws and regulations, and apply relevant support policies equally. Support foreign investment to set up R&D centers, and carry out R&D cooperation with domestic enterprises and scientific research institutions. In terms of further creating a fair competition environment, all regions and departments shall ensure the consistency of the implementation of policies and regulations; shall not increase the restrictions on foreign-invested enterprises without authorization; promote the fair participation of domestic and foreign-funded enterprises in China's standardization work, participate in government procurement bidding and bidding, and invest in foreign-invested enterprises in accordance with laws and regulations. Products produced in China are treated equally. In terms of further strengthening the work of attracting foreign investment, all localities must actively carry out investment promotion activities in accordance with the requirements of the new development concept, support the central and western regions and the northeast regions to undertake industrial transfer; promote the two-way flow of funds, improve the efficiency of the use of funds, and improve the overseas financing capacity of foreign-invested enterprises; deepen Reform of the foreign capital management system [1]. This paper believes the government should conduct a comprehensive evaluation of the current foreign investment access policy to determine which areas can be relaxed to attract more foreign investment, and the point-to-point special relaxation.

Policies are more conducive to solving problems accurately. In the education and medical industry, political censorship can be appropriately relaxed, so that more foreign-funded enterprises are willing to come to China to run schools [2].

2.2. Provide Tax Incentives

There is enormous room for exploration in both theoretical analysis and empirical research on the relationship between foreign investment and gender inequality; However, existing research on this issue is often fragmented. The literature on how foreign investment affects China's labor market

mainly focuses on studying the impact of foreign investment on the wage premium of Chinese workers [3].

Research on gender inequality in China mainly focuses on the facts and causes of gender inequality [4]. Overall, there is relatively little literature on gender inequality from the perspective of globalization. Chen et al. used manufacturing data from the 2004 National Economic Census released by the National Bureau of Statistics to examine the relationship between globalization and the share of female employment in Chinese enterprises, and found that foreign-funded enterprises tend to hire more women [5]. However, its research is based on cross-sectional data analysis and does not address the endogeneity of control variables, nor does it consider further analysis of market competition, nor does it consider the impact of education levels of employees of different genders. Li Lei et al. studied theoretically and empirically the impact of foreign investment on the gender employment gap and gender wage gap in China's service industry, and only used cross-sectional data, while empirical research only focused on the service industry [6]. Although the article examined the reduction of gender employment gap caused by foreign investment, it did not identify the competitive effect of foreign investment entry and did not consider the impact of differences in education levels among different groups. Providing tax incentives is an effective way to attract foreign investment into the education and medical industry, but it needs to be carefully planned to ensure that incentive policies can attract foreign investment without harming domestic finance and fair competition in the market. Here are some possible tax incentives:

First of all, the government can consider providing tax deductions or tax reductions for foreign-funded enterprises to invest in the fields of education and medical care for a certain period of time. This can include reducing the tax burden of corporate income tax, value-added tax, personal income tax, etc. Secondly, for bulk assets such as medical equipment, educational equipment and real estate, the government can provide more favorable depreciation and amortization policies to reduce the capital cost of enterprises. In addition, for enterprises engaged in research and development in the medical field, the government can provide research and development support, such as tax credits or exemptions for research and development expenses. At the same time, local governments can formulate their own tax incentive policies to provide additional tax incentives for foreign-funded enterprises according to the local economy and market conditions. For imported medical equipment, drugs and educational materials, the government can reduce or reduce tariffs and import taxes to reduce the cost of foreign-funded enterprises. In addition, it is very critical to attract talents. In order to attract foreign doctors, educators and other professionals, the government can provide preferential policies on personal income tax to encourage them to work in China. Another important point is to provide a stable tax policy to ensure that foreign-funded enterprises will not face unreasonable tax changes within a certain period of time and enhance their investment confidence. Last but not least, it is necessary to provide clear and transparent tax policies so that foreign-funded enterprises can understand their tax obligations and rights and interests. It should be emphasized that tax incentives should be coordinated with other policies and measures to ensure that foreign-funded enterprises will not harm fair competition and fiscal revenue in the domestic market. The government should also formulate effective regulatory measures to ensure that foreign-funded enterprises fulfill their tax obligations. Most importantly, these tax incentives should have a clear deadline to avoid unnecessary financial losses.

2.3. How to Reduce the Difficulty of Administrative Approval

In order to better develop the current situation, international capital has entered the domestic private education field on a large scale, and foreign investment is optimistic about the huge development potential of the domestic education market. At the same time, private education institutions themselves also need funds to improve themselves and expand their territory. In the early stages of

the development of private education, there were several rented private houses - small workshop style training classrooms - that made the sound of reading loud. With years of development, private education has gradually matured, and small workshop style classrooms have gradually become spacious and bright teaching buildings. The teaching staff of private education institutions have also increased accordingly. But further development cannot be achieved without funding, which is precisely the weakness of private education institutions. To develop, one must have funds, but the government is indifferent to private education and can only rely on self financing, "sighed a person from a private education institution. In order to attract foreign investment into the education and medical industry, it is very important to reduce the difficulty of administrative approval. The following are some ways to reduce the difficulty of administrative examination and approval: the most important thing is to simplify the registration and approval procedures of foreign-funded enterprises, and reduce unnecessary lengthy steps, documents and approval links to improve approval efficiency [7]. At the same time, it is also necessary to establish a one-stop service agency to provide one-stop services for foreign-funded enterprises, including application, approval, registration and registration, so as to reduce the approval burden of enterprises. It is also necessary to clarify the approval standards for foreign education and medical projects to avoid the subjective judgment and ambiguity of the competent authorities. This can be achieved by publishing detailed approval guidelines or flowcharts. It is also necessary to take advantage of the boom of the "Internet Plus" era to provide online application and approval services for enterprises, so that foreign-funded enterprises can submit application materials through electronic channels and accelerate the approval process. Government departments need to set a time limit for approval to ensure that the approval department completes the approval within the specified time to avoid unnecessary delays. At the same time, reduce the minimum registered capital requirements for foreign-funded education and medical projects to reduce the investment threshold. Special approval windows or institutions can be set up to be responsible for the approval of foreign-funded education and medical projects to improve professionalism and efficiency. Legal support, including legal counsel and translation services, should also be provided to foreign-funded enterprises to ensure that they understand and comply with local regulations. Carry out risk assessment for different types of foreign investment projects, adopt different approval processes, and simplify the approval of low-risk projects. Finally, communication is also crucial, and it is necessary to establish an effective communication mechanism between foreign-funded enterprises and the approval department in order to solve problems and provide support in a timely manner. These methods can help the government reduce the difficulty of administrative approval of foreign investment entering the education and medical industry, attract more foreign investors, and also help improve the transparency and fairness of approval. The government should formulate specific policies according to the actual situation to promote the inflow of foreign investment and promote the development of related industries. China will continue to strengthen high-level international educational exchanges and cooperation in the field of higher education, encourage research institutes, universities, and overseas research institutions to establish joint laboratories or development research centers, and jointly cultivate high-level innovative talents. This has proposed a new direction for China's higher education to utilize foreign investment. We need to further leverage the advantages of high quality, low treatment, and existing research equipment of research personnel in Chinese universities, attract foreign investment, increase investment in technological research and development, accelerate the construction of research bases and key laboratories in Chinese universities, strengthen research project funding, and provide good opportunities for China to carry out technological innovation and undertake international technology transfer.

2.4. Ensure the Protection of Intellectual Property Rights

Compared with non-export enterprises, intellectual property protection has a stronger innovation incentive effect on China's export enterprises.

Similarly, compared with small and micro enterprises, large enterprises have stronger innovation and complementarity [8]. As early as 1942, Schumpeter proposed that only large enterprises with a large market share have the ability to monopolize the innovative product market, thus occupying most of the innovation revenue [9]. Therefore, in order to monopolize innovation returns and mitigate the potential strategic threats of competitors, large enterprises with excellent innovation capabilities often produce more patentable technologies, thus having more patent applications [8]. Melto et al. believe that the tendency of patent innovation increases monotonically with the size of the enterprise [6]. Hanel studied the reasons for the differences in the needs of enterprises of different sizes for intellectual property protection, which he believed was mainly related to the innovation intensity and financial constraints of enterprises [7]. Compared with large enterprises, small enterprises have weak innovation ability and low innovation output level, especially the level of invention-based innovation far behind, and invention patents contain most of the value of intellectual property protection. Therefore, the tendency to apply the intellectual property protection system is positively related to the scale of enterprises. When the environment of the intellectual property system changes, the greater the impact on large enterprises. On the other hand, small enterprises have fewer high-value technologies, which mainly rely on the innovation path of acquiring and imitating external technologies [10]. Strengthening intellectual property protection will reduce knowledge spillover and increase the cost of imitation, which may have a weak or even adverse impact on the innovation incentive effect of small enterprises. In addition, the cost of intellectual property protection also tends to support large enterprises. The cost of intellectual property protection includes learning costs, management costs for obtaining and maintaining intellectual property rights, monitoring costs for monitoring the occurrence of infringement, and potential litigation costs. Compared with large enterprises, small and medium-sized enterprises have a greater burden. Burrone and Esteban study found that small and medium-sized enterprises face many constraints and obstacles in the effective use of intellectual property rights systems. For example, limited knowledge of the intellectual property system, the high cost of using the intellectual property system, and the lack of legal, commercial and technical support for the development of intellectual property strategies. Lanjouw and Schancherman believe that enterprises of different sizes are heterogeneous in terms of patent litigation risks. Small-scale enterprises are usually at a disadvantage in the protection of their intellectual property rights, and decentralized patent rights and strategic patent behavior hinder enterprises from effectively carrying out research and development activities. In addition, large enterprises usually have strong risk resistance and financing capabilities, while small and medium-sized enterprises have high financing costs and low financing efficiency, so they face long-term financing problems, which greatly reduces their ability to obtain complementary assets related to innovation [10]. For these reasons, the innovation effect of intellectual property protection may be closely related to the size of the enterprise [2]. Ensuring the protection of intellectual property rights is one of the key factors in attracting foreign investment into China's education and medical industry. Here are some ways to protect intellectual property rights: (1) Contract protection: When signing contracts with foreign-funded enterprises, clarify the ownership and use rights of intellectual property rights. The contract shall include detailed intellectual property terms, which stipulate the transfer, license and protection of intellectual property rights. (2) Intellectual property rights review: For foreign-funded enterprises, strict intellectual property rights review is carried out to ensure that they have legal intellectual property rights. This includes patents, trademarks, copyrights, etc. (3) Technical review: In technology transfer or cooperation projects, technical review is carried out to

ensure that the technology of foreign-funded enterprises does not infringe China's intellectual property rights. This can be achieved through the evaluation of technical experts. (4) Register intellectual property rights in accordance with the law: Encourage foreign-funded enterprises to register their intellectual property rights, such as trademarks, patents and copyrights, in China to strengthen protection. (5) Confidentiality agreement: Foreign-funded enterprises are required to sign a confidentiality agreement, making it clear that they shall not disclose sensitive information in the project, and return or destroy the information after the end of the project. (6) Supervision and law enforcement: Strengthen supervision and law enforcement to ensure that foreign-funded enterprises comply with intellectual property laws and contract terms. Set up a special intellectual property law enforcement department to deal with infringements. (7) Dispute settlement mechanism: A dispute settlement mechanism is stipulated in the contract for the rapid resolution of intellectual property disputes. You can consider using an arbitration institution or a professional intellectual property court. (8) Education and training: Provide intellectual property education and training for foreign-funded enterprises to understand China's intellectual property laws and practices to avoid infringement. (9) International cooperation: Cooperate with other countries to combat intellectual property infringement and protect intellectual property rights through international channels. (10) Legislative improvement: revise and improve intellectual property laws and regulations when necessary to adapt to new challenges and developments. Through these measures, China can attract foreign investment into the education and medical industry, while ensuring that intellectual property rights are fully protected, so as to promote the development of these industries and the transfer of technology and knowledge. This helps to attract more foreign investment and improve China's international competitiveness.

3. Strengthen Supervision and Monitoring

Foreign investment into China's medical and education industries requires an effective regulatory and monitoring mechanism to ensure compliance, protect the domestic market and protect the public interest. The following are some methods of supervision and monitoring: First of all, in terms of supervision, we need to formulate detailed regulations and policies to clarify the operating conditions, standards, rights and responsibilities of foreign medical and education enterprises. These regulations should cover the enterprise's access conditions, operation specifications, price management, curriculum setting, teacher requirements, etc. Then a special regulatory body or department should be set up to supervise the business activities of foreign-funded medical and educational enterprises and ensure that they comply with regulations and policies. At the same time, we should pay attention to the strict examination and approval of foreign medical and education projects to ensure that enterprises meet the access conditions and operating requirements. The approval process should be transparent and efficient. Regular inspections and evaluations should also be carried out to monitor the operation of foreign-funded enterprises and ensure that they continue to comply with regulations and standards.

At the same time, foreign medical and education enterprises are required to disclose necessary information to regulators and the public, including financial reports, curriculum settings, teachers, etc. A complaint handling mechanism should be established to allow the public to report non-compliance and investigate and deal with complaints.

As an important component of non-public enterprises, foreign-funded enterprises have played an important role in promoting China's economic development in the new era. Doing a good job in the party building work of foreign-funded enterprises is of great significance: it is conducive to further strengthening the leadership and control of our party over the socialist market economy, and ensuring the stable, sustainable, and healthy development of the socialist market economy; It is conducive to improving the scientific level of our party building, maintaining the progressiveness of the party, and

further consolidating the organizational foundation of our party's governance; It is conducive to promoting the better operation and production of foreign-funded enterprises, and further promoting the development of China's socialist market economy. However, due to the unique management mode, cultural background, and business philosophy of foreign-funded enterprises, their party building work is different from the party building work within the system. Therefore, we are required to actively analyze the problems in the party building work of foreign-funded enterprises and explore and think about strategies to improve the scientific level of party building in foreign-funded enterprises.

It is also necessary to clarify the sanctions for violations, including fines, suspension of business licenses, revocation of licenses, etc., to ensure compliance. In addition, in terms of monitoring, we need relevant departments to collect data from foreign medical and education enterprises, including economic data, academic performance, student satisfaction, etc., to monitor their business situation and performance. It is also necessary to entrust independent third-party institutions to evaluate and evaluate the quality and impact of foreign medical and education enterprises to ensure that they provide high-quality services. Relevant departments and units also need to monitor the market competition situation to ensure that the competition between foreign-funded enterprises and domestic enterprises is fair and does not harm the interests of domestic enterprises. In China, a socialist country, the will of the people must also be considered, so relevant departments should also be required to collect and analyze public feedback and complaints to improve regulatory policies and measures. Finally, we should learn from the regulatory experience of other countries and continuously improve and optimize the regulatory and monitoring mechanisms. On the whole, an effective supervision and monitoring mechanism can ensure that the operation of foreign medical and education enterprises in China is legal, compliant and of high quality, which is conducive to protecting the public interest, promoting market competition and maintaining the sustainable development of domestic industries. These mechanisms should be transparent, impartial and efficient to achieve the goal of supervision and monitoring.

4. Party Affairs Construction Work

As a non-public economy, foreign-funded enterprises are not only an important component of the socialist market economy, but also an important foundation for China's economic and social development. Therefore, it is necessary to unwaveringly encourage, support, and guide the development of the non-public economy, and stimulate its vitality and creativity. In developed coastal areas, foreign-funded enterprises play an important role in the local economic development. According to statistics from the Ningbo Foreign Economic and Trade Commission, as of the end of 2012, Ningbo had approved the establishment of 5674 foreign-funded enterprises with a total investment of 50.216 billion US dollars, a registered capital of 21.5 billion US dollars, and a paid in capital of 194 7.7 billion US dollars, with a total tax payment of 29.687 billion yuan. In terms of grassroots construction of the Party, among the approved foreign-funded enterprises, 4031 are actually operating, including 1972 foreign-funded enterprises and 2059 Sino foreign joint ventures or cooperative enterprises; There are 1675 Hong Kong, Macao, and Taiwan funded enterprises, and 2356 foreign-invested enterprises. Among these foreign-funded enterprises, 19 have established party committees, 24 have established general party branches, 894 have established separate party branches, and 3094 have been included in the management of joint and regional party organizations, basically achieving full coverage of party building work.

In order to strengthen the party building work of foreign-funded enterprises, the Organization Department of the Ningbo Municipal Party Committee conducted a comprehensive survey of the party building situation of foreign-funded enterprises in the city from February to June 2012. A total of 10876 questionnaires were distributed, 10539 were collected, and 9219 were valid, with a pass rate of 87.5%. The survey subjects are: investors of foreign-funded enterprises, middle and senior

management personnel, party organization secretaries, ordinary party members, and general employees; The content involves organizational settings, leadership forms, party member development, influence on the enterprise, party building recognition, cultural integration, etc. The survey shows that 61.99% of respondents believe that it is "necessary" and "necessary" to establish party organizations in foreign-funded enterprises. The proportion of respondents who believe that party organizations in enterprises play a "significant promoting role" and "have a certain promoting role" in production and operation, leading enterprises to assume social responsibility, and helping enterprises attract and gather talents are 72.49%, 66.82%, and 62.43%, respectively, 53.39% believe that the overall evaluation of the role of the party organization in their enterprise is "good" and "good", while 64.64% believe that party members have more outstanding performance, stronger sense of responsibility, and more development opportunities in the enterprise. At the same time, respondents believe that the proportion of "support" and "comparative support" for party building work from foreign-funded enterprise investors is 55.88%. Overall, carrying out party building work in foreign-funded enterprises has been welcomed and supported by a large number of employees, including business owners, and is considered necessary and effective. However, due to differences in the nature of enterprises, management systems, and cultural concepts, there are still many problems in the party building work of foreign-funded enterprises that need to be addressed through institutional and institutional innovation.

It is important for foreign-funded enterprises to implement party and government work in China, which helps to maintain political stability and social harmony of the country, as well as ensure the legitimate operation of enterprises in China. The following are some methods to implement party and government work: firstly, to complete the construction of party organizations, establish party organizations within foreign-funded enterprises, recruit Chinese party members, and establish party committees to ensure political stability and organizational discipline within the enterprise. Next is party building work, which includes party member education and training, organizing life meetings, and educating party members on their party spirit, in order to enhance their political awareness and self-cultivation. Of course, it is also important for party members to participate in enterprise management. Allowing party members to participate in enterprise management and decision-making ensures that party members play a pioneering and exemplary role in the enterprise. After all, in our country, the Party leads all work, and only under the leadership of the Party can there be a correct line that is in line with our national conditions. It is also essential to firmly implement national policies, actively implementing China's national policies, including government policies, laws and regulations, and social responsibilities, to ensure the legitimate and compliant operation of enterprises. Enterprises also need to bear social responsibility, fulfill social responsibility, participate in social welfare undertakings, support local economic and social development, and maintain active cooperation with local governments and communities. Maintaining political stability and security at the same time is also crucial. Pay attention to and maintain the political stability and social security of the location where the enterprise is located, and ensure the safety of the enterprise and its employees. We also need to strengthen external exchanges, actively participate in China's domestic and international affairs, understand and participate in China's political and economic development, and maintain close contact with the government and all sectors of society. It is best for the government to send professional political workers to enterprises for policy promotion and education, and to provide policy promotion and education to employees of foreign-funded enterprises, so that they can understand and comply with Chinese laws, regulations, and policies. We also need to adhere to win-win cooperation, actively cooperate with the Chinese government, and promote mutual benefit and win-win cooperation between enterprises and the Chinese market. To learn to accept social feedback, collect and pay attention to social feedback and opinions, solve problems in a timely manner, and improve the enterprise. Business management. In short, foreign-funded enterprises in China need to actively

fulfill their party and government work, comply with Chinese laws and regulations, and maintain good relationships with the government and society to ensure the long-term stable development of the enterprise. Party and government work helps establish cooperation and mutual trust between enterprises, the Chinese government, and society, and promotes common development.

5. Conclusion

The introduction of foreign investment is a double-edged sword, and the introduction of foreign investment into the education and medical industry has its own advantages and disadvantages. The advantage is that it has cultural significance and is conducive to accelerating the process of globalization. Moreover, the introduction of foreign investment has a catfish effect, which can spur domestic enterprises, stimulate the domestic economy, and is conducive to the growth of domestic enterprises. The disadvantage is that there may be cultural invasion and national security instability. At the same time, foreign-funded enterprises are proficient in capital means and are easy to monopolize the market and hit domestic enterprises. Therefore, it is necessary to let state-owned enterprises and central enterprises play the leading role, and at the same time use the means described in this article to maximize the favorable parts and minimize the unfavorable parts. Contribute to globalization and domestic economic development.

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Intellectual Property Protection in Cross-Border E-Commerce

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Abstract: With the rapid development of Internet technology, electronic trade has become a significant player in the national and global economy. This thesis examines the complex issues surrounding intellectual property rights (IPR) in cross-border electronic trade. The rapid growth of internet technology has led to an increase in transnational economic disputes, particularly in online shopping platforms and e-commerce websites. The presence of pirated products, trademark counterfeiting, brand infringement, and copyright protection are major concerns in this context. Several factors contribute to these disputes, including different legal systems, cultural backgrounds, economic development levels, conflicting interests of countries, and varying stakeholder attitudes towards IPR protection. Notable cases, such as the Apple-Samsung patent dispute and the challenges faced by Alibaba regarding counterfeit goods, highlight the need for comprehensive solutions to safeguard IPR in a globalized marketplace. The thesis also explores how technology can contribute to addressing these challenges. Blockchain technology can provide enhanced security, transparency, and efficiency in managing intellectual property rights. Big data and artificial intelligence can automate the analysis and monitoring of digital content, enabling faster identification and action against infringement. Establishing global collaborative IP protection platforms and innovative dispute resolution mechanisms are also crucial steps forward.

Keywords: intellectual property, cross-border electronic trade, block chain technology, big data and artificial intelligence

1. Introduction

With the rapid development of Internet technology, electronic trade has become a significant player in the national and global economy. However, this progress has led to complex transnational economic disputes that are difficult to resolve, especially in cases involving intellectual property rights (IPR). These issues are prevalent in international electronic trade, particularly in online shopping platforms and e-commerce websites. One major issue is the presence of pirated products that infringe IPR, including the production and sale of counterfeit goods and the unauthorized use of protected products. Trademark counterfeiting and brand infringement are pervasive, harming both the rights holders and consumers. Copyright protection is also a crucial concern, as digital content is vulnerable to piracy and illegal downloading, undermining the rights of content creators. There are several reasons for the constant disputes over IPR in cross-border electronic trade. First, different legal systems and cultural backgrounds influence the understanding and enforcement of IPR. Second,

the level of economic development and conflicting interests of countries play a role. Third, the interests of various stakeholders, such as rights holders, consumers, innovators, and businesses, can lead to different attitudes and policies on IPR protection. Finally, despite international standards provided by organizations like the World Intellectual Property Organization (WIPO), countries interpret and respond to IPR protection differently. These issues can be observed in prominent cases such as the Apple-Samsung case and the Alibaba case. The interplay between international business law and cross-border trade has become increasingly interconnected in the context of electronic trade. The issues surrounding IPR in cross-border electronic trade are complex and arise from variations in legal systems, economic development, stakeholder interests, and differing interpretations and responses to IPR protection. Prominent cases like the Apple-Samsung dispute and the challenges faced by Alibaba demonstrate the need for comprehensive solutions to safeguard IPR and foster sustainable e-commerce practices in a globalized marketplace. Indeed, new technologies have the potential to revolutionize the resolution of property rights disputes and enhance the protection and supervision of intellectual property rights.

2. Intellectual Property Rights (IPR) Issues in Cross-Border Electronic Trade

Product piracy and infringement, including counterfeit goods, trademark and brand infringement, copyright infringement, and intellectual property theft, pose significant challenges in online shopping and e-commerce. These issues involve the unauthorized production and sale of counterfeit products, the malicious use of well-known trademarks and brand names, piracy and unauthorized redistribution of digital content, and the theft of product designs and trade secrets. These infringements harm the rights of original creators, brand owners, and innovators, disrupt fair competition, and undermine technological progress.

2.1. Causes of IPR Disputes in Cross-Border Trade

There are several reasons for the constant disputes over IPR in cross-border electronic trade. First, different legal systems and cultural backgrounds influence the understanding and enforcement of IPR. Second, the level of economic development and conflicting interests of countries play a role. Developed countries tend to prioritize IPR protection to safeguard their innovation and economic interests, while some developing countries may seek flexibility to boost their technological development. Third, the interests of various stakeholders, such as rights holders, consumers, innovators, and businesses, can lead to different attitudes and policies on IPR protection. Finally, despite international standards provided by organizations like the World Intellectual Property Organization (WIPO), countries interpret and respond to IPR protection differently.

2.1.1. Legal Systems and Cultural Differences

Legal systems and cultural differences play significant roles in causing intellectual property rights (IPR) disputes in cross-border trade. Here are some ways in which they contribute to such conflicts. Firstly, variations in Intellectual Property Laws: Different countries have different legal frameworks and levels of protection for intellectual property. These variations can create confusion and loopholes, leading to disputes when products or content protected by one country's laws are sold or used in another jurisdiction. The differences in copyright duration, patent requirements, and trademark regulations can complicate cross-border trade and trigger IPR disputes. Secondly, enforcement and Compliance Challenges: Inconsistent enforcement of IPR laws can lead to disputes in cross-border trade. Some countries may have stronger enforcement mechanisms and stricter penalties for infringements, while others may have weaker enforcement or limited resources to combat IPR violations effectively. The lack of harmonized enforcement practices across borders can contribute to

disputes between rights holders. Also, cultural Norms and Attitudes: Cultural differences can also influence the perception of intellectual property and shape attitudes towards IPR protection. Some societies may have a more relaxed approach towards copying and imitating products, viewing it as a form of flattery or a way to promote innovation. These cultural norms can clash with the legal standards of other countries and cause disputes over IPR in cross-border trade. In addition, language and Communication Barriers: Language barriers and communication gaps can exacerbate IPR disputes in cross-border trade. Misinterpretations or misunderstandings regarding intellectual property rights, licensing agreements, or infringement claims can arise due to different languages, legal terminology, or business practices. This can complicate negotiations and settlements, leading to prolonged disputes. Finally, differences in Jurisdiction and Legal Remedies: Determining the jurisdiction and applicable laws in cross-border IPR disputes can be challenging. The choice of forum and the availability of legal remedies may vary, making it difficult to pursue legal action or obtain adequate compensation for IPR infringements. Conflicting judgments from different jurisdictions can further complicate the resolution of cross-border IPR disputes.

2.1.2. Stakeholder Attitudes and Policies

Stakeholder attitudes and policies play a significant role in causing intellectual property rights (IPR) disputes in cross-border trade. These disputes arise due to various factors. Firstly, divergent views on IPR protection among stakeholders, such as governments, industries, and consumer groups, contribute to conflicts. Some advocate for strong IPR enforcement to protect innovation and creativity, while others prioritize affordable access to products and information. This clash of interests can lead to disputes over IPR infringement. Secondly, differences in governmental policies and regulations regarding IPR across countries create inconsistencies that affect cross-border trade. Discrepancies in patentability criteria, copyright limitations, or trade secret protection can give rise to disputes when practices in one country are perceived as inadequate or unfair by another. Moreover, stakeholders may adopt strategies to gain a competitive advantage in the international market, leading to IPR disputes. This can involve using trade barriers, discriminatory practices, or subsidies that undermine the rights of other stakeholders. Disagreements over market access and fair competition can escalate into disputes involving IPR violations. Additionally, inadequate education and awareness of IPR concepts and regulations among stakeholders also contribute to disputes. When businesses, consumers, or even government agencies are unaware of IPR protections and their legal obligations, unintentional violations or disputes may occur during cross-border transactions. Furthermore, disagreements over licensing agreements and technology transfers can lead to IPR conflicts. Stakeholders may have differing expectations, terms, or interpretations of these agreements, resulting in disputes over licensing fees, contractual obligations, or the unauthorized use of licensed technology.

2.1.3. Variations in IPR Interpretation and Response

Stakeholders from different jurisdictions may have contrasting understandings of IPR regulations, which can result in disputes over perceived infringements. Secondly, the ambiguity of international treaties and agreements, such as the TRIPS Agreement, can contribute to IPR conflicts [1]. The interpretation and implementation of these agreements may differ among countries, leading to discrepancies in understanding rights and obligations [2]. Unclear language or differing perspectives can create fertile ground for disputes to arise. Inconsistent approaches to IPR enforcement also play a part in cross-border disputes. Countries vary in the stringency and effectiveness of their enforcement measures. Stakeholders operating in jurisdictions with strong enforcement may encounter challenges when dealing with counterparts in countries with weaker enforcement. This discrepancy can be seen as unfair competition or inadequate protection, thereby triggering disputes. Furthermore, the lack of

international cooperation exacerbates IPR disputes. Countries may prioritize different aspects of IPR or lack effective mechanisms for resolving cross-border conflicts. This can result in a lack of mutual recognition or enforcement of IPR rights, further fueling disputes and hindering effective resolution. Inadequate cross-border communication and collaboration contribute to IPR conflicts as well. Language barriers, cultural nuances, or differences in business practices can lead to misunderstandings or misinterpretations of IPR rights and obligations. Insufficient dialogue and collaboration among stakeholders increase the likelihood of disputes arising and make their resolution more challenging. To address these challenges, it is essential to enhance international cooperation and promote the harmonization of IPR laws and regulations. Providing clearer guidelines and principles within international agreements can help reduce ambiguity and promote consistent interpretation. Improving dialogue, communication, and collaboration among stakeholders will foster a better understanding of IPR issues, reducing the likelihood of conflicts. Additionally, exploring alternative dispute resolution mechanisms can contribute to the timely and efficient resolution of IPR disputes in cross-border trade.

2.2. Analysis of Prominent Cases

2.2.1. Apple-Samsung Case

The patent dispute between Apple and Samsung serves as a specific case of intellectual property rights issues in cross-border electronic trading. These disputes involve allegations of patent and design infringement between the two companies, leading to lengthy legal battles and controversies among consumers and businesses [3]. The dispute originated from Apple accusing Samsung of infringing its design patents and software features in its smartphone products [4]. Apple claimed that Samsung's phone appearance and user interface were too similar to its iPhone and iPad. Consequently, Apple filed lawsuits seeking injunctions and substantial compensation against Samsung in multiple countries' courts. However, Samsung retaliated by claiming that Apple infringed its patents and countersued Apple for wireless communication technology and software functionality. This led to a series of strategic litigations and counter-litigations, including proceedings in courts in the United States, South Korea, and other countries. These disputes garnered global attention and had significant impacts on the global electronics industry. Court rulings and settlement agreements favored Apple in some cases while favoring Samsung in others. This enduring legal conflict not only consumed a considerable amount of time and resources but also intensified competition between the two companies and sparked support and boycotts from consumers and businesses towards their respective brands. This case highlights the complexity and importance of intellectual property rights issues in cross-border electronic trading [5]. Differences in intellectual property laws and regulations among different countries, as well as varying interpretations and enforcement of patents and designs, become sources of disputes. The lack of international cooperation and coordination mechanisms further complicates the resolution of these disputes. To avoid similar disputes, the international community needs to further enhance the coordination and harmonization of intellectual property laws and regulations. Strengthening international cooperation and communication channels would facilitate timely dispute resolution and establish more transparent and reliable dispute settlement mechanisms. Meanwhile, businesses involved in cross-border transactions should enhance risk management and respect others' intellectual property rights to avoid potential disputes and losses.

2.2.2. Alibaba Case

The dispute over Alibaba selling counterfeit products serves as a specific case of intellectual property rights issues in cross-border electronic trade. This case involves sellers on the Alibaba platform selling counterfeit products that infringe upon intellectual property rights, leading to protests and

legal actions from brand owners. Many well-known brands, particularly luxury brands, utilize the Alibaba platform to sell their genuine products to global consumers. However, there are also unlawful merchants selling inferior counterfeit products on the platform, posing a significant threat to the reputation and interests of brand owners. Brand owners have repeatedly accused Alibaba of failing to effectively combat the sale of counterfeit products and have demanded stronger verification measures for seller identity and product authenticity to ensure that only legitimate products are sold [6]. This has resulted in disputes with Alibaba, involving allegations of infringement and claims for damages from brand owners against the platform operator. Alibaba, in response, has argued that it has implemented various measures to combat counterfeit products, such as establishing intellectual property protection mechanisms and complaint handling procedures, as well as strengthening seller verification and product screening [7]. Alibaba states that the millions of sellers on its platform make it challenging to eradicate the sale of counterfeit products entirely but emphasizes its commitment to resolving the issue and collaborating with brand owners. These disputes have garnered widespread public and industry attention. As one of the largest e-commerce platforms globally, Alibaba bears a greater responsibility to protect intellectual property and combat counterfeit products. This case highlights the importance and challenges of intellectual property protection in cross-border electronic trade. To address this issue, Alibaba and other e-commerce platforms need to further strengthen their intellectual property protection mechanisms, enhance seller identity verification and product authentication, strengthen complaint handling procedures, and establish close collaborations with brand owners. Simultaneously, governments should enact and enforce stricter intellectual property protection laws and regulations to ensure fair competition and innovation protection.

3. The Potential of Technology in Resolving IPR Disputes

3.1. Blockchain Technology for Enhanced IPR Management

Blockchain technology has the potential to revolutionize intellectual property rights (IPR) management by providing a transparent and immutable record of ownership and transactions. It ensures the authenticity and integrity of digital assets, making it difficult to manipulate or counterfeit them [8]. By using blockchain, it becomes easier to track and verify the origin of products and their associated intellectual property rights. This technology can enhance the efficiency and security of IPR management systems, reducing the risk of infringement and facilitating dispute resolution processes.

3.2. Big Data and AI for Real-Time Detection of Infringement

The use of big data analytics and artificial intelligence (AI) can significantly improve the detection and monitoring of intellectual property rights infringement. Through data mining and analysis, patterns and trends related to counterfeiting and infringement can be identified, enabling early intervention. AI-powered algorithms can scan online platforms, websites, and social media to detect unauthorized use of copyrighted materials, trademarks, or patented technologies [9]. Real-time detection of infringement allows for prompt actions to be taken, protecting the rights of intellectual property owners.

3.3. Global Collaborative IP Protection Platforms

The establishment of global collaborative platforms can facilitate cooperation among countries, businesses, and intellectual property offices to enhance IP protection. These platforms can promote information sharing, joint investigations, and cross-border cooperation in tackling intellectual property infringement. By aligning policies, resources, and legal frameworks, countries can

streamline IP protection efforts, improve enforcement mechanisms, and expeditiously resolve disputes in a globalized digital landscape.

3.4. Innovation in Dispute Resolution Mechanisms

To address IPR disputes effectively, there is a need for innovative dispute resolution mechanisms that are efficient, fair, and accessible. Alternative dispute resolution methods such as mediation and arbitration can offer faster and cost-effective resolution processes compared to traditional litigation. Online dispute resolution platforms and technologies enable parties to engage in negotiations, present evidence, and receive judgments remotely. Embracing innovative dispute resolution mechanisms promotes access to justice and encourages amicable solutions to IPR disputes [10].

4. Challenges and Suggestions

4.1. Importance and Challenges of Technology Applications

The application of technology in resolving IPR disputes is of utmost importance in the digital era. It offers enhanced security, transparency, efficiency, and automation in managing intellectual property rights. Technologies like blockchain, big data, and artificial intelligence can facilitate real-time detection and monitoring of infringement acts and pirated products. Collaboration platforms can improve global cooperation and information sharing, while innovative dispute resolution mechanisms can expedite the resolution process. However, there are challenges associated with technology applications. Legal frameworks need to be developed or adapted to accommodate these innovations. Industry cooperation is vital to ensure the successful implementation of technology solutions. Stakeholder engagement is crucial to address concerns and ensure a balanced approach to IPR protection.

4.2. Recommendations for Resolving IPR Disputes in the Digital Era

Based on research findings, the paper proposes the following recommendations for resolving intellectual property rights (IPR) disputes in the digital era. Firstly, it is crucial to strengthen international cooperation among governments, businesses, and other stakeholders. By collaborating and sharing information, effective measures can be taken to combat intellectual property infringement. Global collaborative IP protection platforms that integrate big data and artificial intelligence can greatly enhance cooperation and coordination efforts. Secondly, legal frameworks need to be enhanced to address the challenges posed by the digital era. This entails harmonizing IPR laws across jurisdictions to ensure consistent enforcement and providing clear guidelines for the use of technology in resolving disputes. By updating and adapting the legal frameworks, proper mechanisms can be established to safeguard intellectual property rights. Thirdly, promoting industry self-regulation plays a significant role in combating counterfeiting and infringement. Businesses should take proactive measures to implement robust strategies against counterfeit products, improve product traceability, and promote responsible e-commerce practices. Such initiatives will not only protect the rights holders but also ensure consumer safety and satisfaction. Furthermore, educating and raising awareness about the importance of IPR protection is essential. Increasing awareness among consumers, businesses, and policymakers can foster a culture of respect for intellectual property rights and discourage participation in counterfeiting and infringement activities. Educational initiatives can play a crucial role in nurturing this understanding. Lastly, continued investment in research and development of innovative technologies and dispute resolution mechanisms is crucial. By investing in these areas, intellectual property protection can be advanced, and efficient solutions for resolving IPR disputes can be provided. Embracing and implementing new technologies can streamline the

dispute resolution process and contribute to a more effective and convenient system. In conclusion, resolving IPR disputes in the digital era requires strengthening international cooperation, enhancing legal frameworks, promoting industry self-regulation, educating and raising awareness, and investing in research and development. Implementing these recommendations can contribute to the effective protection of intellectual property rights and the reduction of IPR disputes in the digital landscape.

5. Conclusion

In this paper, it has explored the complex issues surrounding intellectual property rights (IPR) in cross-border electronic trade and has highlighted the prevalence of pirated products and the infringement of IPR, including trademark counterfeiting, brand infringement, and copyright violations. The article has identified reasons for the constant disputes, such as differing legal systems, economic interests, stakeholder attitudes, and interpretations of IPR protection. In addition, it has examined prominent cases, such as the Apple-Samsung dispute and the challenges faced by Alibaba, to illustrate the loopholes in international commercial law and the need for stronger IPR protection and sustainable e-commerce practices. Furthermore, the paper has discussed the potential of technology in resolving IPR disputes and enhancing IPR protection. Specifically, it has explored the contributions of blockchain technology, big data and artificial intelligence, global collaborative IP protection platforms, and innovation in dispute resolution mechanisms.

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The Correlation Between the Macroeconomic Indicator PMI and Private Equity Investment

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Abstract: This paper presents an in-depth analysis of the correlation between China's manufacturing PMI and private equity investment from 2015 to 2022, utilizing correlation and regression analysis methods based on both overall and structural data. The findings reveal a moderate correlation between manufacturing PMI and private equity investment. Specifically, manufacturing PMI demonstrates a predictive effect on private equity investment, with a lead time of one to two quarters. This accounts for 27.7% of the variation in private equity investment. Furthermore, employing the VAR model, this study observes a significant positive effect of manufacturing PMI on private equity investment, with significant positive impacts found during the two and six lagged periods. These results align with the leading indicator characteristic of PMI and suggest that private equity investment serves as a “barometer” for the capital market. Additionally, this paper investigates the correlation between manufacturing PMI and different stages of private equity investments (early, venture capital (VC), and PE investments) while also analyzing the correlation between manufacturing PMI and private equity investments from different funding sources, including RMB and foreign currency private equity investments. The results indicate that, akin to private equity investment in general, early, VC, and PE investments exhibit varying degrees of correlation with manufacturing PMI. Moreover, foreign currency private equity investment demonstrates a stronger correlation with manufacturing PMI compared to RMB private equity investment.

Keywords: macroeconomic indicator, private equity investment, correlation

1. Introduction

Private equity investment is a key element of the innovation and entrepreneurship ecosystem and is instrumental in promoting high-quality economic development. As widely recognized across various sectors, it is essential to increase efforts to promote the sound and standardized development of private equity investment. The Purchasing Managers' Index (PMI) serves as an internationally recognized macroeconomic monitoring indicator and acts as a leading indicator for economic monitoring. Zhu's research on the current development of private equity funds and countermeasures emphasizes the importance of private equity as a prominent representative form of direct financing [1]. Leveraging its professional and flexible advantages, private equity provides vital financial assistance to non-listed companies, particularly high-quality companies that may not meet the necessary conditions for bank loans. This support helps drive the progress of these businesses and plays a significant role in the

development of real economy. Huang highlights the positive impact of private equity investment on corporate value and performance [2]. Introducing private equity investment significantly enhances corporate value and performance. Some scholars have also provided insights into the relationship between manufacturing PMI and the stock market. Sheng and Yang note that the month-on-month growth rate of manufacturing PMI has a positive impact on the monthly returns of the Shanghai Shenzhen CSI 300 [3]. Zhang finds that PMI affects the CSI 800 [4]. However, Yang indicates that the effect of manufacturing PMI on the Shanghai Shenzhen CSI 300 is relatively small, with the most significant effect observed in the first two months after its release, followed by a diminishing effect [5]. Nevertheless, no comprehensive literature analyzing the correlation between PMI and private equity investment currently exists. Undoubtedly, timely monitoring, analysis, and forecasting of investment conditions constitute fundamental prerequisites for promoting sound and standardized development. This study utilizes comprehensive survey data from PEDATA to quantitatively analyze the correlation between the macroeconomic indicator PMI and private equity investment by selecting a reasonable time interval. Additionally, it validates the analysis of the correlation between the structural indicators of private equity investment and PMI, visually presenting the relationship between private equity investment and the macroeconomic indicator. In practice, this analysis enhances the government's targeted macro guidance, improves the financial support system for innovation, and improves the feasibility of investment decision-making for investors.

The data used for this study regarding private equity investment is sourced from PEDATA, a professional SAAS system for private equity investment under Zero2IPO. PEDATA collects data through market research, interviews, and public sources. The manufacturing PMI data is obtained from the website of the National Bureau of Statistics of China. Private equity investment emerged in China during the 1990s. In 2013, the Asset Management Association of China was established, marking the beginning of self-regulation in the industry. In this paper, quarterly data on private equity investment from 2015 to 2022 is selected. During this period, the regulation of the private equity fund industry was gradually improved; revisions were made to the Securities Investment Fund Law, Securities Law, and Interim Measures for the Supervision and Administration of Private Investment Funds; and new asset management regulations and numerous self-regulatory documents were introduced. Private equity investment experienced rapid growth, consolidation and standardization, incremental development, and a mild recovery in this period, making the data rich and representative for the analysis. Corresponding manufacturing PMI data from 2014 to 2022 is also selected to capture the correlation between private equity investment and manufacturing PMI throughout the development process.

2. Correlation Analysis

2.1. Manufacturing PMI and Private Equity Investment

In China, the released PMI indicators include manufacturing PMI, services PMI, and composite PMI. Calculations revealed that among the three indicators, manufacturing PMI exhibits a stronger correlation with private equity investment. Therefore, this study focuses on analyzing manufacturing PMI. As shown in Table 1, the correlation between manufacturing PMI and private equity investment from 2015 to 2022 was found to be 0.37. Considering the leading indicator characteristic of Manufacturing PMI in economic monitoring, it attempted to calculate the correlation between PMI and private equity investment by advancing PMI by one, two, three, and four quarters, respectively. It was found that advancing PMI by one quarter resulted in the highest correlation with private equity investment, which was 0.52. Advancing PMI by two quarters yielded a correlation of 0.51, indicating a moderate level of correlation. This implies that, in periods without significant disruptions,

manufacturing PMI can be used to forecast changes in private equity investment one to two quarters in advance.

Table 1: Correlation between Manufacturing PMI and Private Equity Investment in different time interval.

	Private Equity Investment and PMI During the Same Period	Private Investment Lagging by One Period	Private Investment Lagging by Two Periods	Private Investment Lagging by Three Periods	Private Investment Lagging by Four Periods
Correlation	0.37	0.52	0.51	0.45	0.34

From an investment theory perspective, investors tend to expand their investments when the macroeconomic conditions improve and they become more risk-averse and decrease investment during economic downturns. In the context of private equity investment, which is considered a form of investment behavior in the capital market, the capital market serves as a “barometer” of the national economy and its performance is influenced by macroeconomic indicators. In practical operations, the changes in the PMI index, which is one to two quarters ahead, align with the operational characteristics of private equity funds. It is worth noticing that there is a natural process from fundraising to investment for private equity funds, apart from the funds that have already been raised and are ready to be invested. From an industry perspective, the top ten sectors in which private equity funds invest include information technology, business services, healthcare, consumer lifestyle, culture and sports, manufacturing, finance, electronic information, e-commerce, and automotive transportation. These industries exhibit a strong correlation with manufacturing PMI during the same period. Furthermore, government-guided funds constitute an important component of private equity investment. However, it is observed that the fundraising amount of these funds shows a correlation of 0.05 with manufacturing PMI, indicating a lack of significant correlation. This factor influences the degree of correlation between manufacturing PMI and private equity investment.

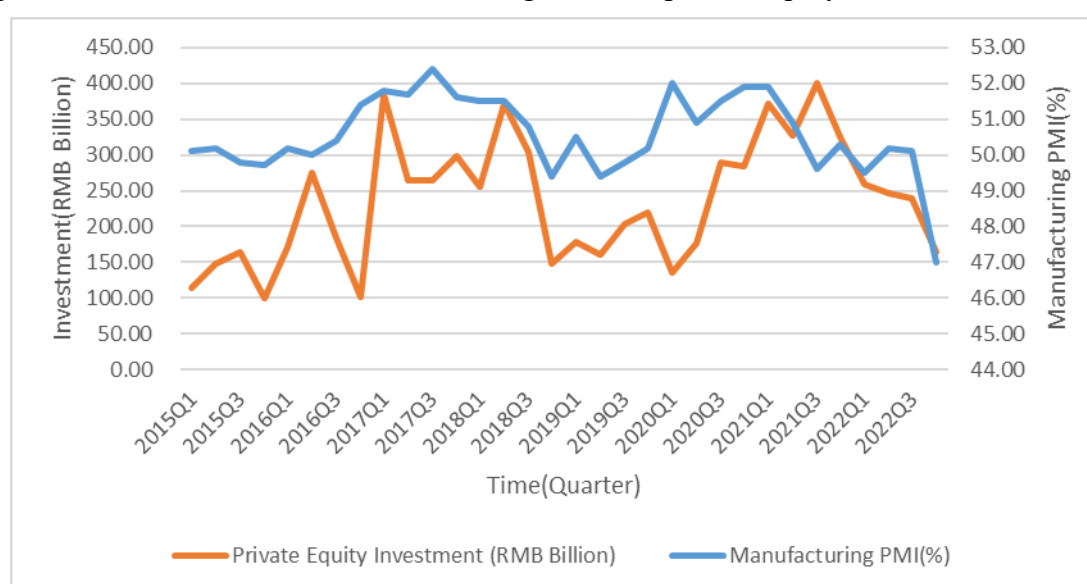


Figure 1: Correlation between Manufacturing PMI and Private Equity Investment.

(Photo/Picture credit: Original).

Figure 1 illustrates the trends in private equity investment over different years. Compared to the changes in manufacturing PMI, from 2015 to early 2017 and from late 2018 to late 2022, the two indicators generally exhibited similar trends for most of the time interval. Especially since 2020, private equity fund investments have been on an upward trajectory, reaching their peak in the third quarter of 2021. During the same period, manufacturing PMI peaked in the first quarter of 2021 but subsequently declined due to the impact of the COVID-19 pandemic. It is important to note that private equity fund investments are significantly influenced by policies. For instance, from early 2017 to early 2018, there was a noticeable divergence between private equity investment and manufacturing PMI trends. This period coincided with the year prior to the introduction of new regulations for asset management, which led to consolidation and differentiation within the asset management industry. As an important form of direct financing in the capital market, private equity fund investments are greatly affected by monetary policies and economic trends [6]. Another example is a steeper decline in private equity investment in 2018. During that year, there was a significant increase in the risk of stock pledges by major shareholders of listed companies, which negatively impacted market confidence. Additionally, the introduction of new asset management regulations further contributed to the decline in private equity investment, resulting in a more pronounced decrease compared to the manufacturing PMI. Another example is the growth of private equity funds since 2020. In addition to economic factors, the launch of the Science and Technology Innovation Board (STAR Market) and the implementation of the registration-based system for the Growth Enterprise Market (GEM) in 2019 also contributed to the growth of private equity fund investments. These initiatives have played a role in fostering the growth of private equity fund investments.

2.2. Manufacturing PMI and Private Equity Investments at Different Periods

Private equity funds raise capital to invest in promising startup companies [7]. These companies can be classified into different investments, including the seed stage, early stage, expansion stage, and maturity stage. In the second stage, early investments primarily target companies, typically within the first year of their establishment. VC investments, on the other hand, focus on early growth companies, usually within 1 to 3 years of their establishment. PE investments primarily target companies in the expansion and maturity stages.

Table 2: Correlation between Manufacturing PMI in different time intervals and Private Equity Investments in different stages.

Correlation	Private Equity Investment and PMI During the Same Period	Private Investment Lagging by One Period	Private Investment Lagging by Two Periods	Private Investment Lagging by Three Periods	Private Investment Lagging by Four Periods
Private equity investment (including early, VC, and PE investments)	0.37	0.52	0.51	0.45	0.34
Early investment	0.21	0.33	0.44	0.41	0.40
VC investment	0.18	0.40	0.50	0.47	0.44
PE investment	0.41	0.53	0.50	0.42	0.32

As shown in Table 2, the time intervals exhibiting the strongest correlation between private equity investments in different stages of companies and manufacturing PMI vary. For PE investment, similar

to private equity investment as a whole, its strongest correlation with manufacturing PMI occurs when the latter leads the former by one quarter. In this case, the correlation was 0.53, slightly higher than that between manufacturing PMI and private equity investment, indicating a moderate correlation. Likewise, for early investment and VC investment, the strongest correlation with manufacturing PMI occurs when manufacturing PMI leads them by two quarters. The correlation for early investment is 0.44, and for VC investment, it is 0.5. This indicates that investments in companies that are within the first three years of their establishment are primarily focused on their medium to long-term growth potential. While these investments are correlated with the macroeconomic conditions at the time, their correlation is not as strong as that of PE investment.

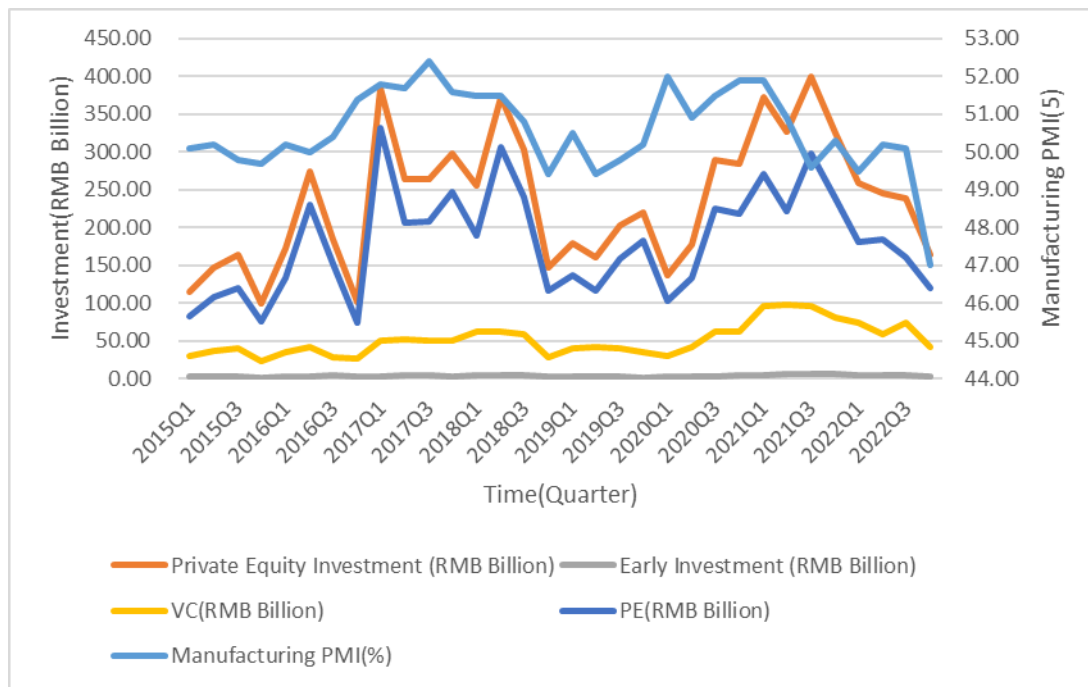


Figure 2: Correlation between Manufacturing PMI and Private Equity Investments in different stages.
(Photo/Picture credit: Original).

According to Figure 2, early investment and VC investment generally exhibit a similar trend to the overall private equity investment, albeit with slight differences. On the other hand, the trend of PE investment aligns more closely with the overall private equity investment trend.

2.3. Correlation Between Manufacturing PMI and Private Equity Investments from Different Funding Sources

Private equity investment funds can be classified into RMB and foreign currency private equity funds by the funding source. As indicated in Table 3, the correlation between foreign currency private equity investment and manufacturing PMI is 0.56, which is higher than the correlation for private equity investment as a whole. The highest correlation appears when the PMI leads by two quarters. This can be attributed to foreign currency funds having the ability to allocate resources globally and closely monitor the macroeconomic trends of specific countries. This global perspective enables them to make optimal investment decisions [6]. On the other hand, the correlation between RMB private equity investment and manufacturing PMI is 0.38, matching the time when the PMI leads by one quarter.

Table 3: Correlation between Manufacturing PMI and Private Equity Investments from different funding sources in various time intervals.

Correlation	Private equity Investment and PMI During the Same period	Private Investment Lagging by One Period	Private Investment Lagging by Two Periods	Private Investment Lagging by Three Periods	Private Investment Lagging by Four Periods
Private equity investment (including early, VC, and PE investments)	0.37	0.52	0.51	0.45	0.34
RMB investment	0.24	0.38	0.33	0.26	0.19
Foreign currency investment	0.40	0.50	0.56	0.54	0.45

As depicted in Figure 3, the number of foreign currency private equity investments has shown a consistent decline since the beginning of 2021, reaching its lowest point in recent years [7]. Concurrently, manufacturing PMI has also been at its lowest level within the research period. In contrast, the trend of RMB private equity investment aligns more closely with the overall private equity investment.

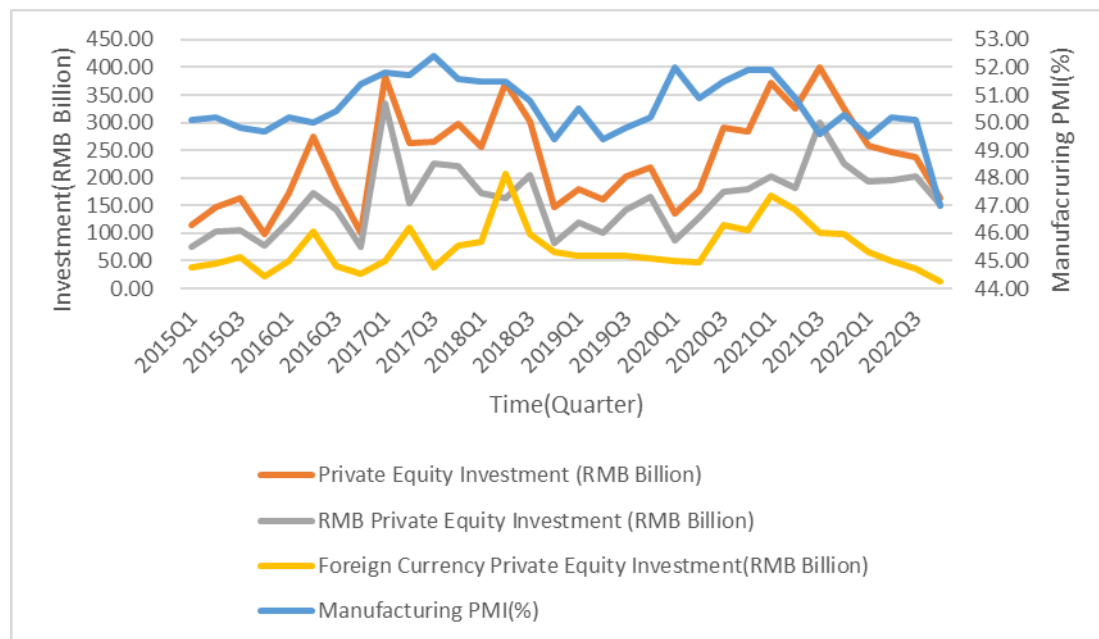


Figure 3: Correlation between Manufacturing PMI and Private Equity Investments from different funding sources (Photo/Picture credit: Original).

3. Regression Analysis

To further investigate the relationship between manufacturing PMI and private equity investment, this paper conducted a regression analysis. In this analysis, manufacturing PMI was treated as the independent variable (X), while private equity investment served as the dependent variable (Y) [8].

Table 4: Regression analysis of Manufacturing PMI and Private Equity Investment.

Linear Regression Analysis Results (n=32)							
	Unstandardized Coefficient		Standardized Coefficient	t	p	Collinearity Diagnosis	
	B	Standard Error	$Beta$			VIF	Tolerance
Constant	-23403.238	7595.419	-	-3.081	0.004**	-	-
China's Manufacturing PMI (%)	508.341	149.890	0.526	3.391	0.002**	1.000	1.000
R^2	0.277						
Adjusted R^2	0.253						
F	$F(1,30)=11.502, p=0.002$						
D-W	1.510						
* $p<0.05$ ** $p<0.01$							

It can be observed from Table 4 that the R-squared value of the model is 0.277, indicating that China's manufacturing PMI (%) can explain 27.7% of the variation in private equity investment (in hundred million yuan). The F-test conducted on the model shows that the model passed the F-test ($F=11.502, p=0.002<0.05$). This indicates that China's manufacturing PMI (%) does produce a significant effect on private equity investment (in hundred million yuan). Based on the final analysis, the regression coefficient for China's Manufacturing PMI (%) is determined to be 508.341 ($t=3.391, p=0.002<0.01$). This implies that China's manufacturing PMI (%) has a significant positive effect on private equity investment (in hundred million yuan).

4. Model Analysis

4.1. Modeling

Unit root tests were conducted on private equity investment, early investment, VC investment, PE investment, RMB private equity investment, foreign currency private equity investment, and GDP from manufacturing. The results indicate that all variables, except for VC investment, passed the unit root test and exhibited stationary series. However, VC investment did not pass the Augmented Dickey Fuller (ADF) test. To address this, first-order differencing was applied to the data, which represents the quarterly growth of VC investment. Upon differencing, the series became stationary. Therefore, VAR models were established for private equity investment, early investment, PE investment, RMB private equity investment, foreign currency private equity investment, and GDP from manufacturing. Additionally, a VAR model was established for DiffVC and Diff Manufacturing PMI [9].

After considering various indicators and the impulse response and variance decomposition, it was found that the VAR model with a lag of three periods yielded the best results [10]. Therefore, for this study, the VAR model with a lag of three periods was selected as the preferred model. A further stability analysis was conducted by examining the characteristic root distribution plot of the VAR model. The AR characteristic root plot revealed that all the eigenvalues for both VAR models were within the unit circle. This indicates that there are no roots greater than 1 in the models, suggesting good stability of the constructed VAR models.

4.2. Impulse Response

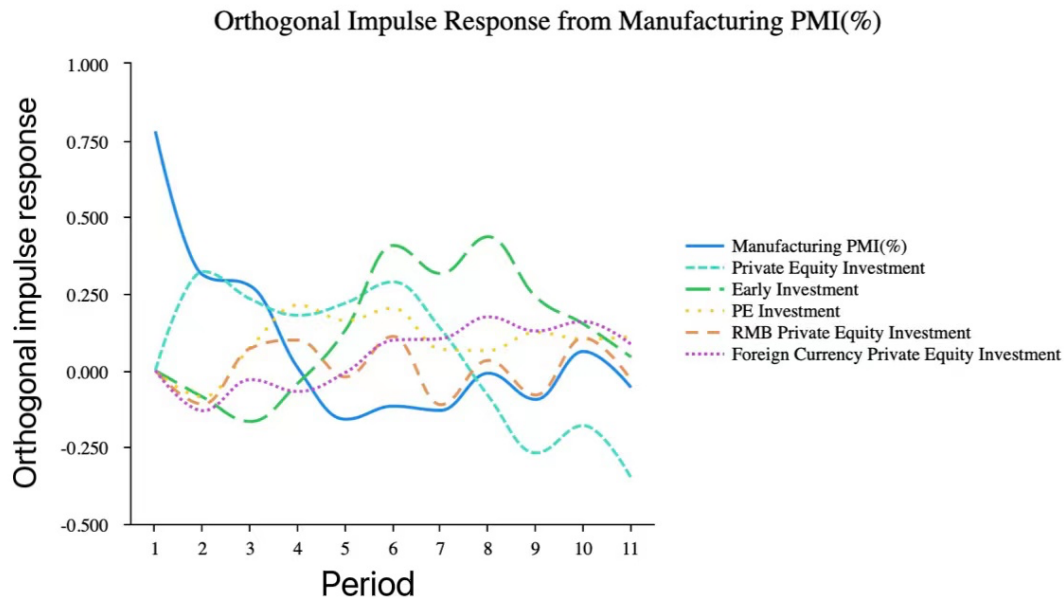


Figure 4: Impulse response of Private Equity Investment to Manufacturing PMI changes.

(Photo/Picture credit: Original).

The impulse response curve (see Figure 4) is used to describe the trajectory of the scattering degree as it changes over time. The impact of manufacturing PMI on private equity investment shows two positive peaks in the 2nd and 6th periods, with an influence degree of over 30%, followed by a decline, indicating that an increase in manufacturing PMI promotes the development of private equity investment for a certain period of time. However, its decline also affects the growth of private equity investment for a period of time. The impact of manufacturing PMI on early investment initially shows an inhibitory effect for the first three periods, with a maximum suppression influence of up to 20%. However, the positive impact gradually increases and peaks in the 6th and 8th periods at nearly 50%, followed by a subsequent decline. This indicates that an increase in PMI attracts more investment toward projects with quick results, creating a crowding-out effect on early investment. However, as the long-term economic outlook improves, it stimulates more positive views from investors on long-term investments, leading to an increase in early investment efforts. The impact of manufacturing PMI on PE investment reveals an initial inhibitory effect for the first two periods, with a maximum suppression influence of up to 10%. Subsequently, the positive impact rapidly increases, reaching its peak of nearly 25% in the 4th period, followed by a fluctuating decline until it stabilizes. Regarding the impact of manufacturing PMI on RMB private equity investment, the impulse response curve also exhibits an initial inhibitory effect for the first two periods, with a maximum suppression influence of up to 10%. However, the suppressive effect weakens over time, and the positive impact fluctuates and increases. It peaks at 15% in the 4th and 6th periods, followed by a fluctuating decline until it stabilizes. As for the impact on foreign currency private equity investment, the impulse response curve also indicates an initial inhibitory effect for the first two periods, with a maximum suppression influence of up to 10%. However, the suppressive effect weakens over time, and the positive impact fluctuates and increases. It peaks at nearly 20% in the 8th and 10th periods, followed by a decline in influence. Compared to RMB private equity investment, the impact of manufacturing PMI on foreign

currency private equity investment lasts for a longer period, indicating an increase in manufacturing PMI stimulates the growth of foreign currency private equity investment for an extended period.

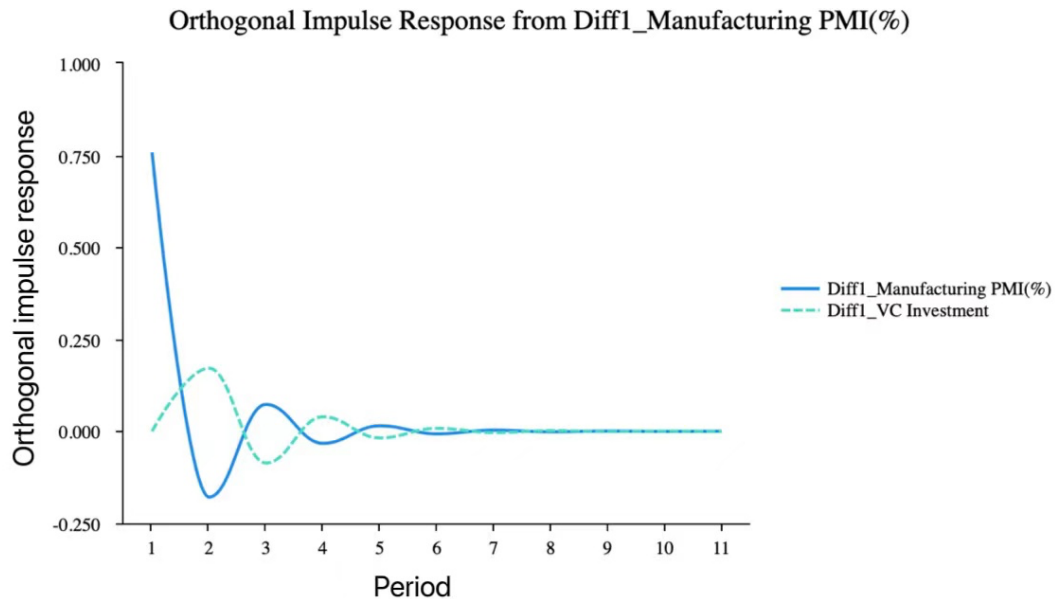


Figure 5: Impulse response of VC Investment Increment to Manufacturing PMI increment changes.
(Photo/Picture credit: Original).

As illustrated in Figure 5, the impact of manufacturing PMI on early investment demonstrates a rapid and significant positive response. It reaches its peak of nearly 25% in the 2nd period, followed by a fluctuating decline, and subsequently stabilizes after the 5th period.

4.3. Variance Decomposition

Table 5: Variance decomposition table-Manufacturing PMI(%).

Period	Variance Decomposition of S.E.	Manufacturing PMI (%)	Private Equity Investment (%)	Early Investment (%)	PE Investment (%)	RMB Private Equity Investment (%)	Foreign Currency Private Equity Investment (%)
1	0.780	100.000	0.000	0.000	0.000	0.000	0.000
2	0.924	82.636	12.183	0.889	0.861	1.413	2.018
3	1.011	76.342	15.463	3.445	1.286	1.695	1.770
4	1.057	69.925	17.056	3.305	5.245	2.430	2.040
5	1.111	65.280	19.339	4.413	6.888	2.232	1.847
6	1.249	52.509	20.631	14.133	8.088	2.556	2.083
7	1.313	48.521	19.747	18.589	7.600	3.033	2.510
8	1.399	42.745	17.750	26.090	6.912	2.726	3.777
9	1.461	39.616	19.661	26.619	7.066	2.799	4.239
10	1.497	37.907	20.165	26.382	7.197	3.173	5.175

From the variance decomposition provided in Table 5, it can be observed that manufacturing PMI has the largest impact on itself, with a 20% explanatory power over a 10-period horizon. Manufacturing PMI has almost no immediate impact on current private equity investment, but its influence grows rapidly and persists for a considerable duration. The impact reaches its peak of 20% in the 6th period and gradually declines. Remarkably, even in the 10th period, manufacturing PMI still contributes to 38% of the variation in private equity investment. The impact of manufacturing PMI on early investment reaches its peak of 27% in the 9th period. The impact on PE investment reaches its peak of 8% in the 6th period. The impact on RMB private equity investment reaches its peak of 3% in the 10th period, while the impact on foreign currency private equity investment reaches its peak of 5% in the 10th period. These findings highlight the leading characteristic of PMI in influencing these investment categories.

Table 6: Variance decomposition table-Diff1 of Manufacturing PMI (%).

Period	Variance Decomposition of S.E.	Diff1_Manufacturing PMI (%)	Diff1_VC Investment (%)
1	0.758	100.000	0.000
2	0.798	95.378	4.622
3	0.805	94.326	5.674
4	0.807	94.110	5.890
5	0.807	94.065	5.935
6	0.807	94.056	5.944
7	0.808	94.054	5.946
8	0.808	94.054	5.946
9	0.808	94.054	5.946
10	0.808	94.054	5.946

From the variance decomposition presented in Table 6, it can be found that the growth of manufacturing PMI has a stable and long-lasting impact on itself. It maintains a high explanatory power of around 94-95% from the 2nd to the 10th period. The impact of the growth of manufacturing PMI on the increment of early investment is also stable and persistent. It maintains an explanatory power of 5.6%-5.95% from the 3rd to the 10th period.

5. Conclusion

The following conclusions can be drawn through the above analysis: Firstly, the correlation and regression analysis between manufacturing PMI and private equity investment reveals a moderate level of correlation between the two variables. Specifically, it is observed that manufacturing PMI can provide a certain level of predictability for private equity investment with a lead time of one to two quarters, explaining approximately 27.7% of the variation in private equity investment. Similar correlation characteristics were observed when examining different investment stages, including early investment, VC investment, and PE investment, although the degree of correlation may vary slightly. Furthermore, there is a stronger correlation between manufacturing PMI and foreign currency private equity investment compared to RMB private equity investment, indicating that foreign currency investors pay closer attention to the macroeconomic conditions of specific countries. Secondly, the VAR model analysis highlights the correlation and impact of manufacturing PMI on private equity investment. The results clearly indicate a significant positive influence of manufacturing PMI on private equity investment. Notably, there are significant positive impacts observed at lags of two and six periods. Similar patterns were observed in the correlation and impact

analysis between manufacturing PMI and VC investment. These findings not only align with the leading indicator characteristics of PMI but also emphasize the role of private equity investment as a “barometer” of the capital market. Thirdly, the VAR model analysis reveals the correlation and impact of manufacturing PMI on various investment categories, including early investment, PE investment, VC investment, RMB private equity investment, and foreign currency private equity investment. The findings indicate that manufacturing PMI initially has a suppressing effect on these indicators, which varies in magnitude. However, it later demonstrates positive effects. Notably, the impact on early investment stands out as the most significant, with an impact exceeding 20%.

The above-mentioned correlation relationships should be adequately applied in practical settings. Firstly, by monitoring manufacturing PMI, investors can make predictions about investment trends and prepare investment strategies in advance. Governments can also proactively adjust financial policies to stimulate investment recovery during favorable economic cycles, while also preparing counter-cyclical policies to mitigate potential investment downturns. Additionally, understanding the correlation between manufacturing PMI and investment can assist policymakers in better timing the implementation of policy measures, such as tax regulations, to achieve desired policy outcomes. Secondly, government-guided funds can play an effective role in identifying the timing and target areas of impact, enabling better guidance for private equity funds to leverage their strengths in early, small-scale, and technology-focused investments. This, in turn, can contribute to an increase in the proportion of direct financing and better serve the high-quality development of the real economy. Thirdly, mitigating the limitations imposed by lag constraints of private equity investment data can offer a fresh perspective for studying and analyzing private equity investments. It is important to note that the data utilized in this study is derived from comprehensive surveys, and as such, there may be limitations in the operation of certain variables. Further comprehensive research is required to delve deeper into the exploration of government-guided funds in the future.

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Research on the New Power of Car Making Ideal Car

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Abstract: In response to the escalating depletion of fossil fuel reserves and the detrimental environmental impacts of conventional internal combustion engine vehicles, the global automotive industry is undergoing a transformative shift towards clean, sustainable, and energy-efficient new energy vehicles (NEVs). This article scrutinizes the remarkable ascent of Ideal Cars, a prominent player in the burgeoning Chinese NEV market. In light of these developments, this scholarly examination explores the multifaceted determinants underpinning Ideal Cars' remarkable trajectory, encompassing its foundational evolution, distinctive technological orientation, nuanced user-centric approach, financial performance, scene-based marketing strategies, and innovative organizational structure. This comprehensive analysis underscores the imperative nature of consumer-oriented product design, the psychological aspects of consumer satisfaction, and the paramount influence of market dynamics in shaping the success of high-end automotive ventures. Ideal Cars' unprecedented journey serves as an instructive case study for the prospective evolution of the NEV industry in China and globally.

Keywords: new energy automobile, market positioning, scene marketing

1. Introduction

Due to the increasing shortage of oil reserves and the harmful emissions of fuel vehicles becoming the main source of urban air pollution, the development of clean, efficient and sustainable new energy vehicle technology, the development of clean alternative fuels for automobiles and the realization of industrialization have become the biggest focus of the development of the world 's automobile industry [1]. Tesla Motors has promoted the rapid development of new energy vehicles in the world by virtue of its excellent technology and the improvement of mechanization. The development of new energy vehicles in China is particularly rapid. According to the data released by the Ministry of Industry and Information Technology on September 12, in August, the production and sales of new energy vehicles in China completed 843,000 and 846,000 respectively, with year-on-year growth of 22 % and 27 % respectively [2]. In the first eight months of this year, China 's automobile exports were 442.7 billion yuan, an increase of 104.4 %. This is another good result after China 's automobile export volume exceeded Japan for the first time in the first half of this year and ranked first in the world [3]. This is inseparable from the rapid development of China 's new energy vehicle brands. Therefore, it is very important to study the development and innovation of China 's new energy vehicle brands for the development of new energy vehicle industry. Weilai, ideal and Xiaopeng are

known as the new forces of automobile manufacturing, rising rapidly, and occupying an important position in the market. However, recently, 'Wei Lai, ideal and Xiaopeng', which was once 'integrated', began to show obvious sales differentiation in April this year. In April's new energy sales list, Ideal ranked 6th, while Xiao Peng and Wei Lai failed to enter the top ten [4]. Nowadays, the sales volume and market popularity of ideal cars are unique. Therefore, this paper studies the reasons for the rapid rise of ideal automobiles to help the further development of China's new energy automobile industry. The article will be divided into three parts, the first part is the case analysis of the development of the ideal automobile brand, the second part is the case analysis of the ideal brand development, and the third part will make a summary.

2. Case Analysis of the Development of Ideal Automobile Brand

2.1. The Establishment and Development of Ideal Automobile

The origin of the Ideal Intelligent Car and Home can be traced back to its founder, Li Xiang. Drawing inspiration from the evolution of the mobile phone market, the company believed that future automobile users would prioritize product utility over price considerations. Consequently, it advocated a practice where just two types of vehicles could fulfill over 90% of urban consumer needs. These two categories comprised a lightweight electric vehicle (SEV) for short-distance urban travel and an SUV tailored for long-distance family use [4]. The concept underpinning Ideal Intelligent Car and Home was always centered on catering to family-oriented usage, a characteristic that would significantly contribute to its subsequent popularity. Before the pivotal year of 2018, the company underwent a process of brand establishment and fundraising. However, the trajectory changed significantly in early 2018 when the SEV project was suspended due to policy-related reasons in China, about a year and a half after its initial proposal. Following the announcement of the SEV project's abandonment, Ideal Intelligent Car and Home wholeheartedly shifted its focus towards promoting the SUV project. In October 2018, the company launched Ideal Intelligent Manufacturing, its intelligent electric vehicle brand, and unveiled its inaugural product, the Ideal Intelligent Manufacturing ONE. In March 2019, the company rebranded itself as Ideal. A month later, pre-orders for the Ideal ONE officially commenced, with deliveries commencing in December. Leveraging unique extended-range technology, advanced intelligent features, and precise market positioning, Ideal quickly gained traction, achieving record-breaking sales figures for its large SUV in the debut year. By the fourth quarter of 2021 (Q4 2021), Ideal's revenue exceeded 10 billion yuan, far surpassing other emerging electric vehicle manufacturers in terms of profitability. Subsequent product launches, such as the Ideal L9, L8, and L7, coupled with technological advancements and explosive word-of-mouth growth, led to further surges in sales. In August 2023, monthly sales of Ideal cars reached 33,900, consistently surpassing 30,000 units per month [5]. The company secured the title of the top-selling SUV brand with over 300,000 units sold for five consecutive months in the Chinese market, significantly outperforming its competitors. Figure 1 illustrates the comprehensive developmental trajectory and financing milestones of Ideal Cars. Through its distinctive Zengcheng technology and exceptional user experience, Ideal Cars successfully captured the favor of consumers and secured multiple rounds of financing. In the subsequent sections, we will delve into an analysis of Ideal's technical advantages and user experience.

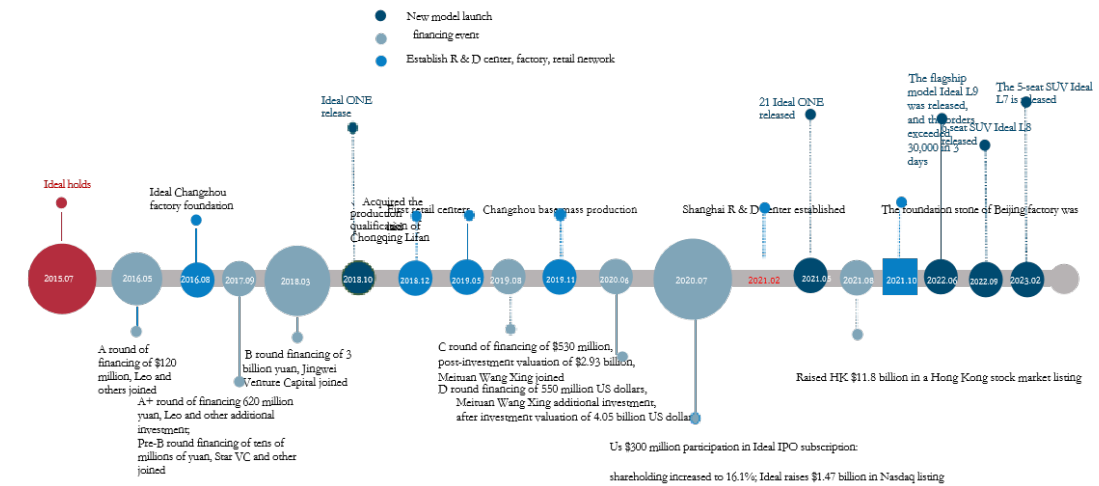


Figure 1: The developmental of Ideal Cars.

2.2. Technological Superiority

In terms of technology, the technology of the ideal car is not very advanced. However, due to its unique technical route, it has great advantages in China's market. Compared with other new energy vehicles, the ideal vehicle adopts a unique extended-range hybrid mode. Compared with conventional pure electric vehicles, plug-in hybrid vehicles, and fuel cell vehicles, the biggest difference of the extended-range vehicle is that it has a fuel engine, but the engine does not directly participate in driving the vehicle, but drives the engine to charge the power battery, and then the power battery drives the motor. In addition, in addition to generating electricity through the engine, the range extender can also be externally charged [6]. In simple terms, the extended-range electric vehicle is a series plug-in hybrid, with an engine, but driven by pure electric vehicles. The biggest advantage it brings is that optional range is better, and the driving experience is no less than pure level station. It is also the best technical route to eliminate the impact of subsidy decline. It can be described as a tool to alleviate the mileage anxiety of potential users and meet the needs of building a strong automobile country.

2.3. User Experience

One of the primary factors contributing to the impressive sales performance of Ideal automobiles is their keen understanding and thorough exploration of customer needs. The technical choices made by Ideal Cars align effectively with the needs of users. Their distinctive extended-range hybrid technology provides users with the advantages of new energy vehicles while circumventing the limitations associated with nascent tram technologies, particularly the issue of range anxiety. This meticulous exploration of customer demands, and precise product positioning have established Ideal automobile products as the most sought-after offerings in the market.

In the realm of user requirements, two categories of latent needs emerge: the first category consists of users who possess vague requirements but struggle to articulate them, while the second category encompasses those users who are entirely unaware of their own needs. Building upon the understanding of the first category of demands, the company boldly defines the second category of needs. This approach not only instills a sense of respect for passengers

outside the driver's seat but also imbues the company's products with a distinctive sense of "home," a defining characteristic that pervades the entire product line [7].

Concerning market positioning, Ideal Cars has chosen a bold stance by targeting a market segment with prices exceeding 200,000 yuan. This strategic decision is underpinned by several considerations. Firstly, achieving cost control in the realm of intelligent and electric vehicles below the 200,000-yuan threshold poses significant challenges. Additionally, generating reasonable profits within this price range necessitates substantial economies of scale, which the company, unlike traditional automotive giants, does not possess.

Moreover, China's automotive market has undergone a transformation, with a growing shift from new car purchases to both new car acquisitions and replacements. This trend, evidenced by the 60% purchase rate in 2020 and an anticipated rise to 80% by 2026, has stimulated demand for higher-priced vehicles. Furthermore, targeting home users represents an incrementally expanding market. Data illustrates that household users constitute the largest user segment in China's 200,000-plus automobile market, with household cars representing an essential component of the country's automotive consumption. Significantly, women wield considerable decision-making authority in family vehicle purchases, comprising 72.22% of decision-makers in 2021. By accurately identifying the needs of women within the family car-buying context, the company has tapped into incremental market potential.

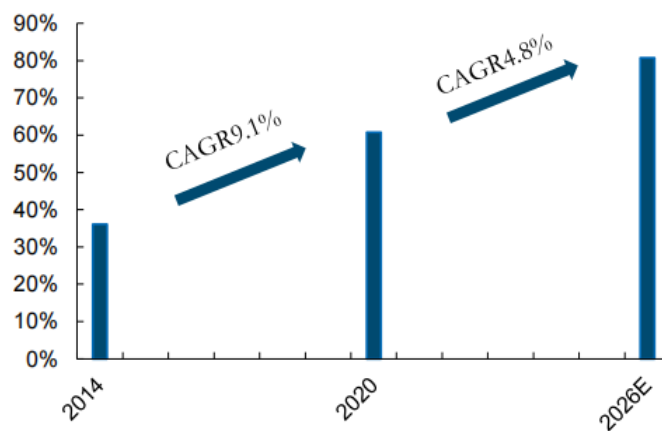


Figure 2: 2014-2026 China passenger car acquisition, increase and replacement of the proportion trend.

2.4. Financial Analysis

2.4.1. Revenue Situation

On the overall revenue situation, due to the improvement of consumers' acceptance of extended-range SUVs for home positioning, the company's single-quarter revenue increased from 3.46 billion yuan of 21Q1 to 18.79 billion yuan of 23Q1, achieving a high-speed growth of revenue doubling. In addition, compared with comparable companies, the absolute value and growth rate of the company's revenue are at the top of the new domestic forces, except that there is still a significant gap between the absolute value of revenue and Tesla.

2.4.2. Profitability

In terms of profitability, the company has consistently maintained a gross profit margin of approximately 20% over an extended period. However, during the third quarter of 2022 (22Q3), the company experienced a notable decline in its overall gross profit, which decreased by 12.7%. This decline was primarily attributable to factors such as inventory provisions and procurement commitments resulting from supply chain disruptions caused by L8's impact on Ideal ONE orders. Nonetheless, there was a significant rebound in the gross profit margin during the first quarter of 2023 (23Q1), reaching a level of 20.4% [8].

2.4.3. Cost Control

The data analysis reveals that the Ideal Company exhibits exemplary cost control practices, second only to Tesla. Excluding accrued procurement losses in 22Q3, the company has consistently maintained a cost rate within the range of 20% to 30% over an extended period. Notably, the cost rate for 22Q4 plummeted to 21.0%, a marked contrast to Xiaopeng's 33.2% and Weilai's 46.7%. In 23Q1, the company's cost rate further decreased to 18.6%, establishing a substantial lead over emerging domestic competitors. Moreover, the Ideal Company's approach to cost control transcends mere thriftiness; it is driven by a strategic allocation of resources where they matter most. Unlike a fixation on extensive marketing endeavors, Ideal's approach is characterized by a judicious allocation of financial resources. In 2022, Ideal Cars' annual marketing expenditure amounted to 5.665 billion yuan, representing 12.5% of its total revenue. In stark contrast, Weilai's marketing expenses reached a staggering 10.537-billion-yuan, accounting for 21.4% of its revenue, while Xiaopeng's marketing costs totaled 6.688-billion-yuan, equivalent to 24.9% of its revenue. However, Ideal does not compromise on research and development (R&D) investments, which surged to 6.78 billion yuan in 2022, doubling year-on-year. Notably, it is the only one among the three companies where R&D expenses surpass marketing expenditures. This strategic orientation underscores the company's commitment to technological advancement and innovation. In terms of sales performance, recent trends underscore the diminishing efficacy of extravagant marketing and excessive charging practices in the era of intelligent electric vehicles. It is the rigorous and prudent management of costs that has propelled Ideal to a position of leadership, enabling it to transition from losses to profits while consolidating its dominance in the burgeoning domestic new energy vehicle market.

2.5. Scene Marketing

The strategy employed by Ideal Cars primarily revolves around the effective communication of the on-ground experience and scene propagation to drive user expansion. This approach prioritizes usage scenarios over intricate technical parameters. Throughout their communication efforts, the company consistently emphasizes the notion of "no mileage anxiety," highlighting scenarios involving long-distance travel and family outings. Instead of dwelling on complex technical principles and product specifications, which can be challenging for the average consumer to grasp, Ideal Cars engages in scene-based communication that resonates with a broader audience on pan-social media platforms. For many ordinary consumers, while they may not possess an in-depth understanding of intricate technical details and specifications, they readily remember and are impressed by the compelling selling point of "no mileage anxiety." "Ideal Cars adeptly ventures into pan-social media communication, effectively distancing itself from traditional automotive media channels. The company leverages digital influencers and bloggers extensively in its

promotional and dissemination efforts, presenting its products through the lens of digital Key Opinion Leaders (KOLs). These digital influencers align their personal use scenarios with the portrayal of the car's standout features, such as expansive screens, comfortable seating, and spacious interiors. Coupled with the slogan "create a mobile home," this strategy fosters a perception among consumers that the product is not merely an automobile but an integral component of a smart home. This strategic maneuver, aimed at diminishing the conventional perception of automotive products, largely encourages consumers to forego parameter-based comparisons with traditional automakers, instead defaulting to the company's emphasis on intelligent user experiences. Ultimately, the expansion of the user base is achieved through a combination of scene-aware design and effective propagation [9]. Several factors underpin this approach. Firstly, traditional automakers conventionally view passenger cars as industrial products and design them primarily as vehicles. However, as automotive performance approaches its zenith, consumer attention naturally shifts from performance to comfort. In response, Ideal Cars redefines the car as a consumer electronics product, positioning it as an integral part of the smart home ecosystem. This shift extends beyond technology to encompass scene-based considerations, catering not only to the driver's experience but also extending respect and comfort to passengers beyond the driver's seat. Secondly, scene-based communication offers a more direct and concise means of engaging and leaving an impression on consumers. This approach is particularly effective in captivating female consumers who play a significant role in decision-making within the family car-buying context. In essence, Ideal Cars' strategic shift moves its products from the confines of the traditional automotive market to the realm of consumer electronics. This not only leaves a lasting impression on consumers through thoughtful design but also introduces distinct selling points in language that resonates with the average consumer's understanding, effectively redefining the narrative surrounding their products.

2.6. Advanced Organizational Structure

The sustained progress of the Ideal Company is intimately intertwined with its ongoing commitment to optimizing its organizational structure. The Ideal Automobile matrix organization, which underpins its strategy execution, has undergone a significant evolution. The company's matrix organization has been thoughtfully structured using a quadrant diagram, delineating different organizational forms tailored to specific business domains. Industrial organizations are responsible for managing the supply chain and manufacturing processes, while enabling organizations encompass Internet and service functions. System organizations focus on vehicle and software platform research and development, while co-creation organizations center around autonomous driving and ecological initiatives. Building upon this foundation, the company has been extending its reach into both system and co-creation organizations, thereby diversifying its strategic capabilities. A pivotal aspect of this transformation has been the adoption of the OKR (Objective and Key Results) framework. This strategic shift marked a move away from traditional industrial processes characterized by limited cross-departmental collaboration. The company recognized the need to align its organizational structure with its business objectives to improve agility and responsiveness. Under the OKR framework, the company introduced "flying books" as a management tool, fostering transparency and accountability in work progress. Key principles included online engineering to ensure transparency, a "hand project" approach for cross-functional decision-making, and continuous iteration with weekly reviews. Further evolution occurred with the implementation of IPD (Integrated Product Development) in 2021. This transformation aimed to establish a more system-centric organizational structure. An "IPD Operations" department

was formed within the Strategic Department, with the Product Department playing a central role in IPD. Each vehicle's development was entrusted to a Product Development Team (PDT) responsible for the entire product lifecycle, from concept definition to sales. These PDTs were collectively referred to as the Strategic Product Development Team (SPDT), overseeing intelligent driving, intelligent space, and vehicle projects. The transformation into a matrix organization further accelerated the realization of IPD's goals [10]. Beginning in December 2022, the company transitioned from a "vertical functional organization" to a "matrix organization." This shift represented a transition from localized focus to simultaneous multi-point coordination. With an expanded product portfolio designed to meet diverse market needs and capture a larger market share, the revised organizational structure, characterized by fluid information flows and enhanced collaboration, became a critical stabilizing force in the fiercely competitive market environment. In essence, the evolution of the Ideal Company's organizational structure, combined with the strategic adoption of frameworks like OKR and IPD, has played a pivotal role in facilitating its ongoing success and market dominance.

3. Conclusion

In the realm of high-end automotive manufacturing, a comprehensive analysis of the factors contributing to the success of the ideal car reveals the critical significance of concurrently observing and scrutinizing market dynamics alongside the refinement of automobile technology. While technological innovation undoubtedly confers convenience upon consumers, it is imperative to recognize that product design, tailored to align with user preferences, also plays an instrumental role in enhancing convenience. A pertinent illustration of this principle can be discerned when examining the competition among luxury automobile brands, namely BMW, Mercedes-Benz, and Audi, within the Chinese market. The ascendancy of Mercedes-Benz in this context can be attributed to its astute grasp of Chinese consumer preferences. Mercedes-Benz took a pioneering step by lengthening the vehicle chassis and augmenting interior opulence, aligning their products more closely with the preferences of Chinese consumers.

Similarly, the adoption of extended-range technology, while not representing a technological breakthrough in the strictest sense, effectively addresses the pervasive issue of range anxiety that often plagues users of new energy vehicles. Beyond the realm of environmental considerations, this technology, by mitigating range anxiety, delves deeply into consumer psychology. Moreover, it strategically introduced SUV models, a favored category among Chinese consumers, characterized by spacious interiors and adorned with luxurious configurations. Positioned at a competitive price point, this product offering swiftly garnered the admiration and preference of the Chinese consumer base upon its market debut.

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Foreign Direct Investment's Role in Bolivian Economy

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Abstract: In the context of globalization, one country's economic growth is affected by the internationally traded goods and services and cross-border investments. It is known that in countries, especially the developing countries, foreign direct investment (FDI) plays a very transcendent role in realizing economic expansion and fostering development by supplying capital in need. This paper examined whether Bolivia's economy is in conformity with the expectation for FDI by using time-series data from 1990 to 2018. The multiple regression analysis reflects a positive relationship, which is statistically significant, between foreign direct investment, economic size, and total exports in Bolivia. The Granger causality test supports FDI's effect on exports but does not find causality for GDP. Therefore, we propose a long-term policy support for FDI to drive future Bolivian economic growth as well as its export expansion.

Keywords: foreign direct investment, economic growth, Bolivia

1. Introduction

In Bolivia, foreign investment has shown considerable growth. This increase is mainly the result of national macroeconomic stability and public policies oriented to generate spaces to attract greater foreign investment. On the other hand, the increase in the prices of raw materials and aspects of external imbalances - low international interest rates, lower dynamism in advanced economies (sometimes with negative growth) - made international investors shift to investing in emerging economies such as Bolivia.

In the current tendency of globalization, the economic growth of a country will be affected by the various activities undertaken by cross-border investment. In all nations, particularly those that are developing, FDI plays an indispensable role in driving local economic growth. This paper tries to contribute to clarifying the possible national channels that foreign investment flows could take to favor growth in the Bolivian context since Bolivia has a small economy, is developing, and has exchange restrictions.

The remaining parts of the paper include an analysis of FDI's role in the Bolivian economy in Section 2, which consists of a literature review, an overview of the economy of Bolivia and FDI, regression analysis, and policy suggestions. Section 3 is the conclusion.

2. Analysis of FDI's Role in Bolivian Economy

We will first review related studies about FDI and then conduct an empirical study of FDI's role in the Bolivian economy using a regression model.

2.1. Literature Review

Many scholars have done extensive research in the field of FDI. The first issue of concern is the variables that are significantly affecting the inflow of FDI into a country. These studies have reported variables like market size (Jadhav, 2012) [1], infrastructure and openness (Singh et al., 2008) [2], human capital, and political environment quality (Maeyen, 2011) [3].

The second issue of interest is the causal relationship between FDI and other economic variables. Some research (Borensztein et al., 1998 [4]; Vu et al., 2006 [5]) indicated a complementary relationship between FDI and human resources. There are many more studies that have reported a significant impact of FDI on economic growth (such as Khaliq and Noy, 2007 [6]; Koff et al., 2016 [7]; Hong, 2013 [8]). But there is also research that suspects such an opinion (Choe, 2003) [9].

Considering the diversified condition, such as resource endowment, of different countries and the different levels of development, the role of FDI for a certain country is expected to be a dynamic one and may not be identical across the globe. Therefore, more empirical studies using country-specific data in this field are necessary before a generic conclusion can be drawn.

2.2. Bolivian Economy and FDI

Bolivia is a landlocked nation situated in the western-central region of South America. The capital is Sucre, while the government and financial center are in La Paz. Santa Cruz de la Sierra is the biggest city and key industrial center, located in the eastern territory. Bolivia is surrounded by Brazil, Paraguay, Argentina, Chile, and Peru. During 2018, the Bolivian economy continued to show growth despite a fragile world economic situation and the deterioration of global and regional prospects. Consequently, a GDP growth of 4.2% was registered, which was slightly above that registered in 2017. This was the outcome of the positive performance of domestic demand, the progress of the industrialization policy, and other measures to promote sector development launched by the government.

On April 4, 2014, Law No. 516 on Investment Promotion was enacted, with the aim of establishing the general legal and institutional framework for the attraction of investments into Bolivia in order to speed up economic growth and upgrade social development in the country. According to the Central Bank of Bolivia's net direct investment liabilities, the gross direct investment received in 2018 totaled US\$ 781 million, which was lower than the amount registered in 2017. These resources were destined for the hydrocarbons (US\$ 282 million), mining (US\$ 123 million), and commerce (US\$114 million) sectors, mainly. Gross direct investment flows mainly came from Sweden (mostly destined to the mining and manufacturing industries), Spain (largely destined to the hydrocarbons sector), and Peru (destined to the manufacturing and financial intermediation sectors).

2.3. Regression Analysis

We use two multiple regression models to calculate the impact of FDI on GDP and the real exports of Bolivia:

$$GDP = \alpha_0 + \beta_1 \cdot FDI + \beta_2 \cdot LF + \beta_3 \cdot GX + \varepsilon_0 \quad (1)$$

In model (1), the dependent variable is the annual gross domestic product (GDP) and independent variables include foreign direct investment (FDI), labor force (LF), and government expenditure (GX).

$$XP = \alpha_1 + \beta_4 \cdot FDI + \beta_5 \cdot LF + \beta_6 \cdot GX + \varepsilon_1 \quad (2)$$

In model (2), the dependent variable is the annual real exports (XP), and the independent variables are FDI, LF, and GX. The time period of variables is from 1990–2018, and data were collected from the World Bank, the Central Bank of Bolivia, and the Economic Commission for Latin America, as shown in Table 1.

Table 1: Variables Description and Data Source.

Variables	Data Source	Website
<i>GDP</i> = Bolivia's GDP <i>XP</i> = Bolivia's Real Export <i>FDI</i> = Foreign Direct Investment <i>LF</i> = Labor Force <i>GX</i> =Government expenditure	World Bank Central Bank of Bolivia Economic Commission for Latin America	https://www.worldbank.org https://www.bcb.gob.bo/ https://www.cepal.org/en

The regression results using ordinary least square (OLS) method are presented in models (1) and (2) in Table 2. The coefficient of FDI is positive and significant at the 1% level in explaining GDP and exports. Both labor force and government expenditure are positive and significant at the 1% level as well. R square is greater than 0.8. For models (3) and (4), inflation rate (IR) and exchange rate (ER) are added to further examine the regression robustness. The significant situation of coefficient of FDI is unchanged for explaining GDP and exports. However, government expenditure and exchange rate are not significant enough to explain real exports.

Table 2: OLS Regression Results.

Variables	GDP (1)	XP (2)	GDP (3)	XP (4)
FDI	0.419 (2.992)***	2.033 (2.299)***	0.529 (3.676)***	2.278 (2.961)***
LF	3389.117 (22.965)***	2509.974 (2.697)***	2917.173 (7.506)***	6055.983 (2.915)***
GX	1.723 (28.852)***	0.874 (2.320)***	1.856 (16.641)***	0.032 (0.054)
IR			32174854 (2.048)*	1.99E+08 (2.366)**
ER			2.00E+08 (1.576)	-8.08E+08 (-1.191)
R ²	0.997	0.842	0.998	0.904
Adjusted-R ²	0.997	0.823	0.997	0.884

Note: t-Statistic in bracket. ***, **, * denote 1%, 5% and 10% significant level respectively.

Table 3: Pair-wise Granger Causality Test Results.

Null Hypothesis	Probability
GDP does not Granger Cause FDI	0.995
FDI does not Granger Cause GDP	0.830
XP does not Granger Cause FDI	0.516
FDI does not Granger Cause XP	0.038**
GDP does not Granger Cause LF	0.241
LF does not Granger Cause GDP	0.058*
GDP does not Granger Cause XP	0.395
XP does not Granger Cause GDP	0.095*

Note: **, * denote 5% and 10% significant level respectively.

To examine the casual relationship between variables, we conducted a pair-wise Granger causality test and the results are shown in Table 3. As seen from the result, FDI and GDP do not Granger cause each other. FDI Granger causes exports (XP) at the 5% significance level. Labor force (LF) and exports (XP) Granger cause GDP at the 10% significance level. We estimate that FDI is more closely related to export-oriented investment purposes. The Bolivian economy is still dependent on labor-intensive industries. FDI, due to its limited size, is still not a decisive driving force for Bolivia's overall economy. However, FDI is a working factor for GDP by contributing to the growth of exports.

2.4. Policy Suggestion

Based on the empirical analysis of the role of FDI, our suggestion for the government is to continue to strengthen the incentive policy towards foreign investment and investors. For developing countries like Bolivia, a lack of capital for upgrading industrial structures is a challenge for its sustainable growth. By attracting FDI to take advantage of the country's resources, exports can be expanded at a faster pace, which will contribute to the scaling up of the economy. Long-term policy for FDI shall be implemented as time is needed to accumulate the economic effect.

3. Conclusion

International capital flows in the form of foreign direct investment are the central topic of this research. Especially for developing countries, FDI plays a very transcendent role as the driver of economic growth and development. This work examined the relationship between FDI and Bolivia's growth. By using time-series data from 1990 to 2018 to analyze the relationship between FDI and the economy in Bolivia, the regression analysis confirmed the positive impact of FDI on Bolivian GDP and total exports. Also, FDI is a Granger cause of exports. Hence, a supportive and long-term policy is proposed to attract foreign investment and investors.

Acknowledgements

The authors would like to thank the reviewers of CONF-BPS 2024 for comments.

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2008 Financial Crisis: Analysis and Guidance

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Abstract: The 2008 financial crisis in the United States severely impacted the global economy. Amid an escalating crisis, the US government implemented a series of bailout policies, which stabilized the domestic market and contributed to global economic recovery. This paper aims to investigate the reasons for the crisis and analyze the advantages and disadvantages of the policies implemented to derive recommendations for preventing and managing financial risks. Studies have indicated that effective government intervention through regulatory policies can prevent bank failures and the deterioration of financial crises. This provides valuable insight for dealing with potential financial risks posed by the Ukraine crisis and the COVID-19 pandemic. The findings of this research highlight the importance of implementing effective regulatory measures to safeguard the financial sector's stability.

Keywords: Financial Crisis, Subprime Mortgage, Economic Recovery, Basel III

1. Introduction

The financial crisis in 2008, also known as the Subprime Crisis, was a catastrophic event in the global financial system that started in the United States [1]. The bursting of the housing bubble primarily triggered the crisis, the explosion of subprime mortgages, and the subsequent collapse of the mortgage-backed securities (MBS) market contributed to the crisis [2]. Its far-reaching consequences have left an indelible mark on the global economy and have served as a cautionary tale for future policy-making.

Early 2000s, when U.S. government policies intended to increase homeownership, the housing market continued to soar, and more and more people were enticed to borrow beyond their means, resulting in inflated housing prices. However, in 2007, interest rates began to rise, and borrowers could not keep up with their mortgage payments. Consequently, the MBS market collapsed, leading to significant losses for financial institutions and investors globally. In 2008, Lehman Brothers, one of the largest investment banks in the United States, filed for bankruptcy. This event sparked panic in the financial markets, causing bank failures and government interventions. Major global financial institutions faced insolvency or were acquired at significantly reduced valuations. Stock markets plummeted, credit markets froze, and layoffs hit various sectors, leading to a deep recession.

The study of the financial crisis has gained immense significance recently, especially amid the complex economic situations caused by the COVID-19 pandemic and the ongoing Ukraine conflict [3-5]. The groundbreaking research on banking and financial crises conducted by Nobel laureates Douglas W. Diamond, Ben S. Bernanke, and Philip H. Dybvig in 2022 has paved the way for a deeper exploration of these critical issues [6]. They have elucidated the mechanisms through which a crisis

can unfold and spread within the financial system by analyzing the interplay of liquidity, risks, and depositor behavior.

By examining this crisis as a case study, it can gain crucial insights into the vulnerabilities within the financial system, the failure of regulatory frameworks, and the ripple effects on various sectors of the economy. Additionally, it can extract valuable lessons on crisis management and the development of effective policy responses to mitigate the impact of such crises in the future. Given the unprecedented challenges posed by the current combination of the COVID-19 pandemic and the Ukraine conflict, the research of the 2008 Financial Crisis holds even greater relevance. Delving deeper into their findings and applying them to the contemporary economic context, can enhance understanding of the potential risks, vulnerabilities, and necessary measures to stabilize and strengthen the financial systems.

2. Cause

The Financial Crisis in the United States was primarily caused by three factors: The Fed's loose monetary policy, the proliferation of subprime mortgages, and the widespread use of Credit Default Swaps (CDS) [7]. The Fed's low interest rates and accommodative monetary policy encouraged risky lending practices, including the issuance of subprime mortgages to borrowers with a high likelihood of default. The securitization and trading of these subprime mortgages, facilitated by CDS, further exacerbated the crisis when the underlying assets began to default.

2.1. The Fed's Monetary Policy

Government policies aimed at stimulating the economy led to inflated housing prices, resulting in a housing market bubble. Borrowing and investment in the real estate market have been encouraged by the Federal Reserve's low interest rate policy, which drove up demand and prices. This created a perception that housing prices would continue to rise indefinitely, leading to excessive borrowing and speculative investment in the real estate sector.

During that time, the availability of low-interest credit and lax lending standards in the United States further fueled the subprime crisis. The Federal Reserve's monetary policy, characterized by low interest rates, made borrowing more affordable, attracting borrowers with lower creditworthiness. Financial institutions relaxed lending standards to accommodate the increasing demand for mortgages, leading to a surge in subprime mortgage lending. These loans were granted to borrowers with poor credit histories and limited income, making them high-risk in nature.

The combination of government policies and easy credit conditions created an environment facilitating subprime mortgage production [8]. Financial institutions, driven by the desire for higher profits, began originating and securitizing subprime mortgages to meet the demand for mortgage-backed securities in the market. This further increased the availability of subprime mortgage products, fueling the unsustainable expansion of subprime lending and contributing to the eventual collapse of the housing market.

2.2. Subprime Mortgage

Subprime Mortgage is one mortgage loan extended to borrowers with a lower credit rating or a higher risk of default [9]. These borrowers usually need to meet the traditional mortgage loan criteria for various reasons such as poor credit history, low income, or limited financial resources. Subprime mortgages often have higher interest rates and less favorable terms than prime mortgages.

The risks associated with subprime mortgages played a significant role in the 2008 financial crisis. Subprime borrowers are considered high-risk borrowers, so the default rates on subprime mortgages significantly increased during the crisis. This led to a decline in the value of mortgage-backed

securities held by financial institutions and a subsequent loss of confidence in the financial market. As a result, the crisis spread to other sectors of the economy, leading to a global recession. The risks of subprime mortgages were exacerbated by the practice of securitization, where these mortgages were bundled together and sold as financial products. This made it difficult to assess the quality of the underlying assets properly.

The emergence of subprime mortgages also contributed to the development of CDS. As concerns grew over the increasing default rates of subprime mortgages, investors sought ways to mitigate their exposure to potential losses. CDS provided a mechanism for transferring the risk of default to other parties. However, the opacity and complexity of these instruments, combined with the high demand for CDS protection, created a market that needed to be more robust to regulate or effectively evaluate. When defaults on subprime mortgages rose sharply, the CDS market faced significant challenges, leading to a further deterioration of the financial system.

2.3. CDS

CDS were financial instruments used to transfer credit risk from one to another party at the time of the financial crisis in 2008, and it allowed investors to speculate on the likelihood of a borrower defaulting on their debt. The CDS seller would obtain regular premium payments from the buyer, and the seller would, in turn, agree to compensate the buyer in case of a default by the borrower. This meant that if the borrower defaulted, the buyer would receive a payout equal to the value of the loan or bond. The idea behind CDS was to enable investors to hedge their credit risk exposure and minimize potential losses [10].

One of the major issues surrounding CDS during this time was the lack of regulation. The CDS market operated largely outside the purview of traditional financial regulators. Unlike other financial instruments, CDS were not subject to the same level of scrutiny, transparency, or capital requirements. This lack of oversight allowed the market to grow rapidly without proper risk management or control mechanisms. As a result, CDS were often traded without appropriate collateral, leading to significant counterparty risk.

In conclusion, CDS were financial instruments that allowed investors to transfer credit risk. They played a significant role in the build-up to the 2008 financial crisis, primarily due to their widespread adoption and lack of regulation. The rapid growth and complexity of the CDS market contributed to the overall instability of the financial system.

3. Consequences

The 2008 financial crisis, also known as the subprime mortgage crisis or the global financial meltdown, had severe consequences across various aspects of the global economy.

Banks breakdown: Such as Washington Mutual, Bear Stearns, and Lehman Brothers, the crisis resulted in the collapse and bankruptcy of several important financial institutions. In the financial system, the breakdown of these banks led to a loss of confidence and trust both domestically and internationally.

Government bailout: Considering the safety of the financial system, to prevent a complete collapse, governments around the world implemented massive bailout packages. These involved injecting enormous amounts of capital into troubled financial institutions, such as banks, which can stabilize the economy. The bailout measures aimed at restoring confidence but also brought about significant public debt burdens.

High unemployment: The financial crisis caused a global recession, resulting in a sharp increase in unemployment rates. As businesses faced financial instability, they laid off workers to cut costs. Many industries, including construction, manufacturing, and financial services, were severely

impacted. For example, the average unemployment rate in the Eurozone reached its peak of 12.2% in 2013 [11].

Foreign investment: The crisis had a major impact on foreign investment due to the uncertainty and risk associated with the financial markets. Foreign direct investment (FDI) declined significantly as companies became reluctant to invest in a volatile economic environment. Emerging economies especially experienced a reduction in FDI, as investors shifted their focus towards more stable regions.

Housing market collapse: The crisis originated in the US housing market, where risky loans and dubious lending practices led to a bubble that burst. As a result, home values plummeted, and many homeowners found themselves facing foreclosure.

Stock market crash: Stock markets worldwide experienced a significant decline. Almost half of the value fell in the Standard & Poor's 500 Index and the Dow Jones Industrial Average, eroding both individual and institutional wealth [12].

Economic contraction: The crisis led to a contraction in economic growth globally. Countries experienced a decline in GDP growth, decreased consumer spending, and reduced business investment, leading to a slowdown in economic activities.

Austerity measures: Such as spending cuts and tax increases, many austerity measures implemented by governments to tackle the economic downturn and rising public debt. These measures aimed to reduce budget deficits but also caused social unrest and economic hardships for many individuals and businesses.

In summary, the 2008 financial crisis had far-reaching consequences. It led to the breakdown of banks, government bailouts, high unemployment rates, a decline in foreign investment, a housing market collapse, a stock market crash, economic contraction, and the implementation of austerity measures. These repercussions persisted for years, highlighting the need for stronger financial regulation and oversight to prevent future crises.

4. Changes

4.1. Dodd-Frank Act

The Dodd-Frank Act was enacted in the United States to deal with the financial crisis, called the Dodd-Frank Wall Street Reform and Consumer Protection Act officially [13]. The crisis was largely attributed to big banks' risky and irresponsible behavior, lack of regulatory oversight, and predatory lending practices. In response to this crisis, the Dodd-Frank Act was passed to stabilize the financial system and prevent a similar crisis from happening again. By President Barack Obama, it was signed into law on July 21, 2010.

The main components of the Dodd-Frank Act are (1) **Financial Stability:** To identify and monitor risks to the financial stability of the United States, the Financial Stability Oversight Council (FSOC) was created. It also established new regulations for Systemically Important Financial Institutions (SIFIs) to mitigate the risk of their failure. (2) **Consumer Protection:** As an independent agency responsible for protecting consumers from unfair and deceptive financial practices, the Consumer Financial Protection Bureau (CFPB) was established. It aimed to improve the transparency and accountability of financial products and services, such as mortgages and credit cards. (3) **Volcker Rule:** The rule restricts banks from engaging in proprietary trading and certain types of speculative investments, named after Paul Volcker, the former Federal Reserve Chairman. It effort to prevent banks from taking excessive risks that could put the financial system at risk. (4) **Derivatives Regulation:** The Act introduced regulations for the derivatives market, aiming to increase transparency, reduce risk, and prevent market manipulation. Most derivatives were required to be traded through central clearinghouses on regulated exchanges and cleared.

The Dodd-Frank Act is significant for several reasons: (1) Enhanced Financial Stability: The regulations and oversight introduced by the Act aimed to prevent another financial crisis by holding financial institutions accountable, reducing systemic risks, and improving the financial system's resilience. (2) Consumer Protection: The creation of the CFPB and the regulations introduced under the Act sought to protect consumers from abusive and predatory financial practices, promoting fairness and transparency in the financial industry. (3) Increased Regulation and Supervision: The Act aimed to close regulatory loopholes, strengthen oversight, and improve risk management practices within the financial industry. It sought to ensure that banks and other financial institutions operate responsibly and sustainably. (4) Global Influence: The Dodd-Frank Act has inspired regulatory reform efforts in other countries, as the financial crisis had global repercussions. It became a model for financial reform, with similar regulatory measures being adopted in other jurisdictions.

In conclusion, to deal with the global financial crisis, the Dodd-Frank Act was enacted. It aimed to address the root causes of the crisis and promote responsible financial practices. It introduced regulatory reforms to protect consumers, enhance financial stability, and prevent a similar crisis from occurring in the future.

4.2. Basel III

On December 16, 2010, the Basel Committee on Banking Supervision (BCBS) released the third edition of Basel after the outbreak of the subprime crisis. As BCBS realized, under the Basel II system, there were still significant institutional loopholes in the international financial system and financial supervision. The global financial regulatory system was upgraded and reformed to close the gaps and improve the general stability of the banking sector by the BCBS and pertinent organizations fundamentally [14]. The new framework for international financial regulatory reform has established the consensus on the assessment methods and additional capital requirements for G-SIFIs subsequently. The most significant change in the Basel III framework was the enhancement of capital and liquidity requirements, as well as the introduction of macroprudential tools to mitigate systemic risks [15].

Increasing the minimum capital requirements for banks was one of the main responses of the Basel Committee. Under Basel III, banks were required to maintain a total capital ratio of at least 8%, and a Tier 1 capital ratio of at least 6%, a Common Equity Tier 1 (CET1) capital ratio of at least 4.5%. Additionally, A Capital Conservation Buffer (CCB) of 2.5% was required for banks to hold to withstand future economic downturns. These stricter capital requirements aimed to ensure that banks had sufficient buffers to absorb losses and maintain stability during periods of financial stress.

Basel III also introduced stricter liquidity requirements to address the funding liquidity risk that emerged during the crisis. To cover net cash outflows over a 30-day stress period, a Liquidity Coverage Ratio (LCR) of at least 100% was required to maintain with banks, which meant that banks had to hold enough high-quality liquid assets. This was intended to enhance banks' ability to withstand short-term liquidity shocks.

Considering liquidity and capital requirements, Basel III also introduced macroprudential tools to mitigate systemic risks. The countercyclical capital buffer (CCyB) was one such tool, with this tool, banks were required to hold additional capital by regulators to prevent the build-up of systemic risks during periods of excessive credit growth. This buffer was intended to be released during economic downturns to support banks and the broader economy.

Furthermore, the Basel Committee introduced stricter regulations for systemically important banks (SIBs). These banks had to maintain higher capital ratios and face additional capital surcharges based on their global systemic importance. This was aimed at reducing the too-big-to-fail problem and protecting the broader financial system from potential failures of SIBs.

Overall, by strengthening liquidity and capital requirements, the framework of Basel III is devoted to enhancing the resilience and stability of the global banking system, introducing macroprudential tools, and addressing the risks associated with systemically important banks. These measures were designed to prevent a recurrence of the financial crisis and promote a safer and more sustainable banking sector.

5. Conclusion

The causes of the 2008 subprime mortgage crisis in the United States can be attributed to several factors. Firstly, an excessive demand for mortgage-backed securities led to reckless lending practices by financial institutions. Additionally, the easy availability of credit and low interest rates encouraged borrowers to take on more debt than they could afford. Furthermore, the securitization of mortgages and the lack of transparency in complex financial products contributed to the crisis. The consequences of the crisis were severe and far-reaching. The crisis also triggered a global financial market meltdown, causing stock markets to plummet and a severe recession that affected economies worldwide.

The aftermath of the crisis revealed the need for a comprehensive understanding of the factors that contribute to the occurrence of financial crises and the measures that can be taken to prevent or mitigate their impact. The research carried out by the 2022 Nobel laureates in economics, highlights the significance of studying financial crises, particularly in light of the 2008 financial crisis. Their contributions shed light on the causes, consequences, and potential prevention of such crises, and also shed light on the effects of policy interventions and regulations in preventing and managing financial crises. Continual research in this field is crucial to ensure the stability and resilience of the global economy.

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Golden Arches Across Cultures: Understanding McDonald's Global and Local Consumer Behavior

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Abstract: Amidst globalization, the fast-food industry, notably brands like McDonald's, has attracted significant interest. McDonald's dominates in the U.S. and has seen remarkable success in markets like China. Yet, despite its global image, differences in marketing and consumer behavior exist between these nations. This study aims to dissect the distinctions between McDonald's in China and the U.S., focusing on product adaptability, advertising, and consumer behavior. The intent is to grasp how global brands localize in varied cultural environments. Historically, McDonald's transitioned from a U.S. local brand to a global powerhouse. The U.S. formed its foundational market, while China presents both vast opportunities and challenges. Key questions addressed include McDonald's product adjustments for diverse cultures and whether advertising should be country-specific. To answer these queries, this paper mixes qualitative and quantitative research. Data will be sourced from consumer surveys and interviews, and a thorough analysis of McDonald's advertising in both nations. Secondary data will also be examined for a holistic view. This approach aims to pinpoint McDonald's strategic adaptations and potentially guide other global brands in localization endeavors.

Keywords: brand influence, consumer behavior, globalization and localization, product adaptability

1. Introduction

The concept of globalization regained attention in the 1980s. Especially in the business realm, Harvard Professor Levitt noted that due to technological advancements, the world would come together like a community [1]. Communication and transportation have reached unprecedented levels of ubiquity and convenience. Looking at the current context, the widespread establishment of global companies has become a reality. The foundational business theory of standardizing products and brands has been promoted by numerous successful companies. However, what differentiates these global companies is not just the products and their underlying philosophies, but more so, their marketing strategies. The premise is to meet customer needs, whether in terms of convenience or cost-effectiveness, both of which are foundational to success. Prioritizing localization is a significant component of these marketing strategies. Many company marketers, after hearing a suggestion or collecting some surveys, draw simple conclusions about the needs of local consumers. This is often insufficiently accurate. They falsely presume that marketing means giving customers what they say they want rather than trying to understand exactly what they would like. McDonald's has, since 1955,

relied on its franchisees [2]. This model allows local McDonald's franchisees to manage their establishments by hiring local talent, eliminating excessive concerns about understanding local cultures. James Cantalupo, President of McDonald's International, claims that the goal of McDonald's is to "become as much a part of the local culture as possible." He objects when people call us a multinational. I like to call us multilocal," meaning that McDonald's goes to great lengths to find local suppliers and local partners whenever new branches are opened. This philosophy has been ingrained in McDonald's since its inception [3]. Now, the proportion of McDonald's franchised restaurants has reached as high as 93%, a rarity for companies on a global scale. McDonald's standardization also maintains its resilience, and it hasn't changed much due to local franchisees.

McDonald's brought its standardization and branding to the world, but what valuable experiences have the world brought to McDonald's? Especially for a country like China, which holds immense potential markets for the future, aspects such as digital operations and unique dietary habits are both noteworthy and worth discussing.

2. Product Adaptability

One of the key factors for McDonald's long-term success is its product adaptability, and the constant addition of new products also helps to diversify business risks. When one product or service is negatively affected, the company can rely on other products that are more popular or better suited to market needs to maintain its performance. In the early 21st century, as various research reports and media attention made the link between fast food and unhealthy lifestyles increasingly apparent, McDonald's, being the largest fast-food chain in the world, naturally became the focus of this issue. Faced with this situation, some companies need strategic adjustments to adapt to consumers who are increasingly focused on health and nutrition. McDonald's product adaptability is often based on profound consumer insights. By constantly updating and adjusting its product line, McDonald's can extend its brand to more consumer groups and markets. To expand its product portfolio, McDonald's has invested a significant amount of time and resources in market research and product development. They began collaborating with nutrition experts to develop a range of nutritionally balanced, low-calorie foods. Products like McDonald's "Apple Slices" and various low-fat salads aim to provide healthier options and have brought about significant economic benefits. This has demonstrated McDonald's progressive product adaptability quite effectively. While other brands like KFC have also launched similar products, the concept of healthy food has become a part of McDonald's. It now appears that this has not only increased its market share but also strengthened the brand's diversity and inclusiveness. Such adjustments are undoubtedly meaningful.

Product adaptability is a relatively vague concept, often used to describe a product's ability to adapt to different environments, conditions, or needs. In addition to the product's inherent advantages, better operation and appropriate changes to cater to the market are key to product adaptability. Proper changes themselves also require consideration and involve many factors. Many companies consider costs, market receptivity, competitors' products, or specific things like holidays, religion, etc. A key concept in product adaptability strategy is to make adaptive changes to existing products, retaining most of the reasonable parts of the original product while making appropriate changes to cater to the individual needs of customers in different countries and regions. However, for a highly standardized company like McDonald's, product improvements require very strict market research and study. Imagine an ordinary restaurant, where changes in the content, appearance, packaging, and even the brand name on the menu can impact the existing customer base. McDonald's ability to adopt excellent product adaptability strategies and maintain a competitive advantage under different consumer needs, purchasing power, and technology is valuable. To encourage purchasing behavior, McDonald's prices its products reasonably. McDonald's understands that their customers are extremely price sensitive, so they obtain real-time data to understand customer behavior and accordingly price their products so

that any change in prices does not change consumers' perception [4]. Analyzing the same products and their prices in the Chinese and American markets, as well as purchasing power and consumer needs, can provide better insights into how McDonald's views these two markets. The data for the analysis will all come from the prices and product names on the official McDonald's websites in China and the United States.

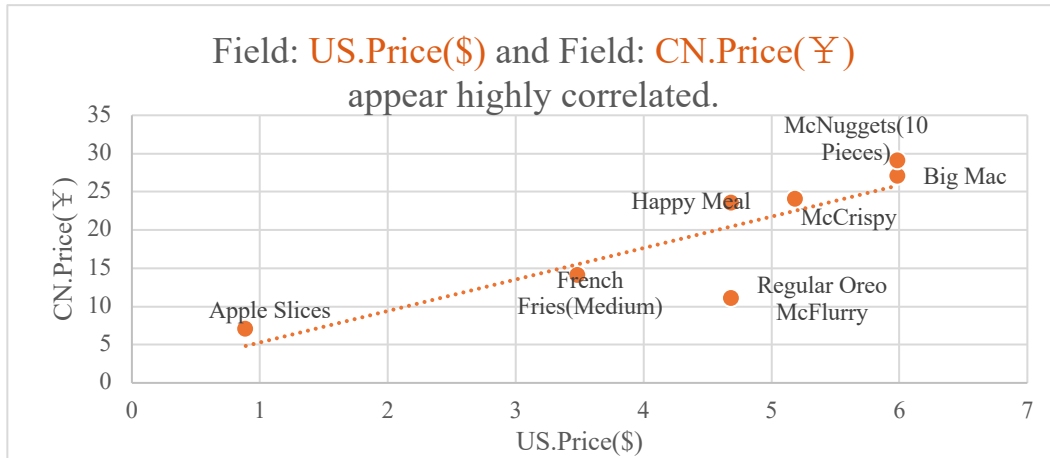


Figure 1: Seven different product prices between the US and China.

In this chart, the vertical axis represents the Renminbi (RMB), and the horizontal axis represents the US dollar. Each point on the chart corresponds to a popular product. It's easy to see that McDonald's has standardized features when it comes to pricing. Whether this pricing standard is influenced by exchange rates or by the raw material market, the core aim is to maintain competitive power in various major markets. Among these key products, only one data point deviates from the trend line. It's McFlurry, and the deviation could be due to one of two reasons: 1. The price is too low in the Chinese market; 2. The price is too high in the American market. From the perspective of the American market, McDonald's McFlurry is undoubtedly a branded, specialty product. Its unique preparation method and taste stand out, unmatched by any other restaurant at scale. On the other hand, in the Chinese market, KFC, McDonald's biggest competitor, also has a similar product called 'K Hurricane.' Such highly similar products have naturally led to price competition. McDonald's once marketed two McFlurrys for 10 RMB (approximately USD 1.37) in June this year. To maintain McFlurry's market share in China, McDonald's has introduced five different flavors, whereas KFC offers more than seven flavors. Regardless of how unique or eye-catching the flavors are, what's most important is that both brands have demonstrated remarkable adaptability for their products.

3. Brand Influence

As a "multilocal" company, McDonald's needs to bring its brand philosophy to various parts of the world. In the face of different cultural environments, McDonald's has to make adjustments to its brand philosophy. A worldwide-affecting brand equity also allows these brands to better conquer new markets [5]. Similarly, a good brand philosophy is also more likely to be accepted by the market in the long run. McDonald's brand image is an important pillar of its ongoing global success, incorporating multiple different elements including speed, convenience, consistency, and family-friendly fun. From its early "Speedee Service System" in the 1950s to the 21st-century global advertising strategy "I'm Lovin' It," the McDonald's brand has undergone many years of adjustments and evolution, always holding fast to the goal of creating a positive and trustworthy brand image.

In the United States, McDonald's primarily positions itself as a family-friendly brand, focusing on value and convenience. According to Light and Kiddon, McDonald's targeted market desires food

that is affordable and convenient in a friendly and clean atmosphere [6]. In other words, the core of McDonald's marketing is tailored to a specific market based on an analysis of consumer buying behavior. According to Ceil, McDonald's has focused its services on baby boomers because they have realized that the buying behavior of small families often gets motivated by children's choices [7]. If the children can be targeted, then the family will also likely indulge in the same products and services. By continuously partnering with other brands to offer interesting children's toys, McDonald's displays its flexibility in catering to consumer preferences.

In the U.S., McDonald's often emphasizes the brand's American roots through marketing activities, using iconic elements like the Golden Arches, Ronald McDonald, and its architectural design as symbols. In China, McDonald's has to some extent altered its brand image to align with local cultural values. While it retains its focus on convenience and consistency, it also leans towards a community aspect, emphasizing family and friend gatherings. McDonald's outlets in China are often seen as social venues for young people, contrasting sharply with its "grab and go" culture promoted in the United States. By observing and collecting short videos or advertisements from major social media platforms in both China and the U.S., the differences in advertising strategies McDonald's employs in these two markets can be understood, thereby gauging their understanding of consumer groups in both markets.

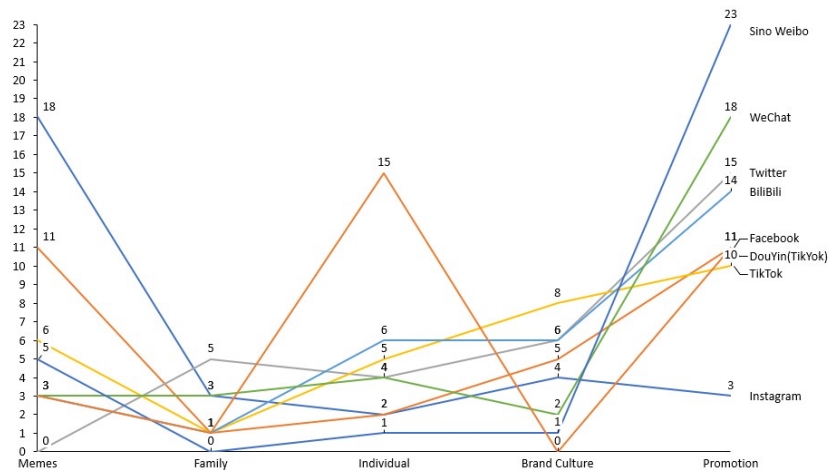


Figure 2: Types of content posted by official McDonald's accounts in social media between the US and China. (US Apps: Twitter, Facebook, TikTok, Instagram; China Apps: Sino Weibo, WeChat, BiliBili, DouYin).

Figure 2 is compiled by researchers from webpage observation. The experiment filters and distinguishes the top 30 posts published by McDonald's to date and sets up five different categories: Memes, Family, Individual, Brand Culture, and Promotion. Memes are a common form of communication on social networks. Family refers to content that has a familial atmosphere and collective emotional tone. Individual refers to content that has individualistic and self-centered themes. Brand Culture refers to content aimed at disseminating brand culture. Promotion refers to content used to promote restaurants, products, and events.

The chart shows that there isn't a significant difference in the ads McDonald's releases in both China and the United States, indicating that McDonald's shows consistency and standardization in its promotional approach. Targeting young users of social media, McDonald's mainly opts for Memes and promotions to market to this group, demonstrating their understanding of it. Memes attract most of the younger audience, and promotions can be indirectly pushed through these memes. The chart also shows an outlier in the Individual category, where half of McDonald's posts on China's DouYin

(TikTok) are focused on individual content. This reflects McDonald's China's attempt to attract this group by advertising from the perspective of young individuals.

McDonald's marketing strategy successfully balances its global brand image with localized strategies, adapting different advertising approaches according to the user demographics of different social media platforms to attract various cultural sensibilities.

On the other hand, the brand conveys convenience. McDonald's has invested heavily in recent years in research and the popularization of automated ordering machines, catering to the general demand for speed. Data shows that online orders now make up the majority of McDonald's revenue in the United States. In America, people rely more on cars, so a large portion of electronic sales comes from drive-throughs. Notably, 2021 Systemwide sales from digital channels exceeded \$18 billion, or over 25% of Systemwide sales in our top six markets (Stocklight). Compared to drive-throughs, emerging electronic payment methods are what McDonald's focuses on and anticipates. The pandemic two years ago has accelerated this layout, and the proportion of electronic sales will be much higher in the future.

Overall, McDonald's customers in the United States come from different demographic backgrounds, but the common factors influencing their choices tend to be speed, affordability, and convenience. Consumers appreciate the brand's consistent quality and frequent promotional activities, such as the "dollar menu" items. McDonald's in the U.S. also faces some criticisms for health issues, leading to measures like adding salad options to the menu. Reasons for visiting McDonald's in China vary; while speed and convenience are valued, the diversity of localized menu options and the atmosphere of the restaurant also affect their choices. The brand is often considered a social gathering destination, especially among young people. Thus, the dining experience is more than just food consumption. This strategic adaptability is crucial for McDonald's to maintain its brand image in vastly different cultural environments. The behavior of consumers in the United States and China towards McDonald's highlights how cultural background shapes brand interaction.

4. Consumer Behavior

Consumer behavior refers to various actions taken by consumers to acquire, use, and dispose of goods or services. These actions are mainly influenced by perceptions, such as lifestyle, consumer views, motives, and other subjective factors. The cultural environment also affects what motivates consumers, how they process information and the kinds of decisions they make. Companies or brands can alter consumer perceptions by analyzing a segment of the consumer group in the market and establishing trust to attract consumers to purchase specific products and services. By understanding the factors that influence consumer behavior, marketers and management can identify and recognize the impact of various factors on consumer choices. If marketing activities are to be successful across cultures, the identification of culturally specific and culturally relevant needs is of paramount importance [8]. They can then attract and retain new consumers by offering products that consumers like and find suitable, thereby increasing the company's profits and sales.

Consumers in China and the United States have some differences at the perception level. These differences are determined by different ages, cultures, social ideas, and life experiences. Through inquiry, it has been found that people aged around 30 or younger consider McDonald's to be fast food, serving to meet some daily life needs. However, those aged 40 and above view McDonald's as junk food and think consumption should be reduced. Such issues have caught public attention in recent years. Concerns about fast-food nutrition intake have led McDonald's to redesign its menu. McDonald's offers various menu options, such as salads, fish, and fruit, to meet consumer needs. Especially in China, McDonald's predominantly uses chicken to make burgers, in which you can often see an overflow of cabbage. On the official McDonald's website in any country, one can find nutritional information for each product, including the most concerning factors like calories, fats,

carbohydrates, and proteins. This provides an effective way for people concerned about health to gather information. The official website clearly shows the changes made to cater to consumers when selling burgers in both China and the U.S., obviously revealing differences in product choices and tastes. These differences not only reflect regional ingredients but also different interpretations of health and nutrition concepts.

Secondly, apart from consumers' perceptions, external factors also have some influence. According to Lee and Ulgado, consumer behavior depends on various factors, and culture and local conditions are important considerations [9]. Culturally, the main factors driving consumer behavior are values, beliefs, and consumption habits. In the U.S., individualism is more popular, so products or services often focus more on individual needs and free choice. In contrast, China's culture is more collectivist, where the needs of the family and the group may be prioritized. Geographically, whether in the U.S. or China, natural environments and taste preferences result in different regional tastes and food choices. By comparing McDonald's outlets on the East and West Coasts of the United States (specifically Seattle, Sacramento, Chicago, and Boston), it can be found that each restaurant offers slightly different sauces for McNuggets. McDonald's on the East Coast provides more hot sauces compared to those on the West Coast [10]. Similarly, in China as early as 1998, McDonald's introduced a limited-time Sichuan spicy sauce to promote the movie "Mulan," which has garnered ongoing attention on the internet. Utilizing the differences in regional tastes coupled with appropriate marketing strategies, consumer attention can be successfully captured.

5. Conclusion

This study delved deeply into the dynamics and complexities of brand influence and consumer behavior across diverse cultural and regional landscapes, using McDonald's as the primary focus. It elucidated how brands maintain global influence through years of adaptation and evolution, specifically in terms of speed, convenience, consistency, and family-friendliness. Additionally, it was understood that consumer behavior is influenced not just by internal perceptions but also by external factors like culture, values, and regional tastes.

McDonald's has successfully established a strong brand image in two distinctly different market environments—the United States and China—by employing flexible global and local marketing strategies. In the United States, McDonald's positions itself mainly as a family-friendly brand that focuses on value and convenience. Conversely, in China, it has shifted towards a more community and family-gathering-oriented marketing model.

What is more noteworthy is how McDonald's sustains its brand position by continually adapting to and meeting the needs and preferences of consumers. For example, following increased public concern about the nutritional intake of fast food, McDonald's revamped its menu to better accommodate a growing health-conscious consumer base.

These findings offer valuable insights not only for other global brands but also are significant for marketers and management. Understanding and identifying the various factors that influence consumer behavior is key to any successful marketing strategy. Especially in today's increasingly globalized world, flexibility and adaptability have become critical elements for brand success.

Lastly, it should be mentioned that consumer needs and preferences are ever-changing and complex, irrespective of the market. Therefore, brands and marketing professionals should continually observe, analyze, and adapt to these changes to maintain their market position and influence. In the long run, only those brands that can understand and adapt to the constantly shifting landscape of global consumer behavior will experience sustained success.

Such research not only helps us understand the complexities of brands and consumer behavior but also spurs further discussions and studies on how to successfully establish and manage brands on a global scale.

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Financial Analysis of Netflix with a Strategic Approach

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Abstract: In the ever-evolving landscape of the entertainment industry, Netflix has emerged as a dominant force, fundamentally reshaping how audiences consume content. This paper delves into the financial intricacies of Netflix, a global streaming giant that has become synonymous with on-demand entertainment. This paper's objective is to conduct a comprehensive financial analysis, scrutinizing key performance metrics, and dissecting strategic choices that have promoted Netflix's meteoric rise. Using financial ratios, cash flow analysis, and assessments of profitability and leverage, I investigate Netflix's financial health and performance over the past five years, and the strategic maneuvers undertaken by the company, including content acquisition, international expansion, and original content production, to understand their implications on Netflix's financial outcomes. This paper unveils a nuanced understanding of Netflix's financial position, providing insights into the company's profitability, liquidity, and market impact. Beyond those, this analysis explores the strategic decisions underpinning Netflix's financial success and their broader implications on the media and entertainment industry. Furthermore, this research has relevance for investors and analysts navigating the evolving landscape of digital content delivery.

Keywords: Netflix, Financial Analysis, ratio, COVID-19, strategy

1. Introduction

The entertainment industry has experienced a profound shift in recent years, driven by technological advancements and evolving consumer preferences. At the forefront of this transformation stands Netflix, a company that has revolutionized how audiences access and engage with content. Netflix, founded in 1997, has since evolved into a global streaming powerhouse with a presence in over 190 countries, boasting millions of subscribers.

The temporary rise of Netflix is not solely attributed to its captivating content but is also intricately intertwined with its financial strategies and performance. This research paper embarks on a comprehensive financial analysis of Netflix, combining quantitative financial analysis with qualitative exploration of strategic decisions. For financial analysis, The author utilizes a conscientious examination of financial statements, cash flows, and an array of financial ratios. I endeavor to paint a detailed picture of Netflix's financial health. However, financial health does not exist in isolation; it is the result of strategic decisions and market dynamics. Therefore, this research extends beyond numbers to dissect the strategic choices Netflix has made over recent years. Content acquisition, international expansion, and original content production have been central to the

company's journey. This knowledge has relevance not only for investors and industry analysts but also for media and entertainment professionals navigating the evolving landscape of digital content delivery.

2. Financial analysis

2.1. Ratio analysis

2.1.1. Profitability ratio: net profit margin & return on equity & current ratio

Net profit margin has increased in recent five years from 7% to 14%, which is a positive sign, indicating improved profitability. This suggests that Netflix has been able to manage its costs and generate higher profits relative to its revenue. In addition, the drop from 17% to 14% from 2021 to 2022 could be a concern [1]. It indicates increased costs or changes in the revenue mix that impacted profitability. ROE is trending upward between 2018 and 2021 but begins to decline in 2022 [2][3]. The upward trend suggests that Netflix has been effectively utilizing shareholder's equity to generate returns. However, the downward trend in ROE in 2022 could be due to various factors, such as increased debt, and changes in net income. Under the covid-19, with people staying at home more, there was a surge in demand for streaming services, which led to an increase in subscriptions, which positively impacted Netflix's net profit margin. Furthermore, to meet the increased demand for content, Netflix had to invest more in acquiring and producing new shows and series. While this investment supported subscriber growth, it also resulted in higher content costs, which could put downward pressure on profitability ratios.

The current ratio has been trending downward in recent years compared to 2018, which indicates Netflix's liquidity position has weakened over the years, and the company has a lower ability to cover the short-term liabilities within its current assets. From 2018 to 2021, the quick ratio is increasing, and decreasing after 2021 [2][3]. During the pandemic, Netflix experienced an increase in its viewership since consumers were put into quarantine at home [4]. While Netflix initially benefited from increased subscriptions during lockdowns, Netflix may have faced challenges in sustaining subscriber growth at the same rapid pace. A slowdown in subscription growth impacts Netflix's revenue and consequently, its liquidity position.

2.1.2. Leverage ratio: debt-to-equity ratio

The debt-to-equity ratio is declining from 2018 to 2022, which shows a positive sign. Netflix is relying less on debt financing and is, instead, using more of its equity or cash flow to support its operations and investments. During the pandemic.

2.2. Financial statement Analysis

This part will introduce the performance of Netflix during recent years, and through the understanding of statements build more reliable financial information for Netflix [5].

In the income statement, the revenue is increasing from 2018 to 2022, which benefits from the COVID-19 pandemic because the housing economy brings more subscribers for Netflix, and Netflix's income is decided by subscribers [5]. While the revenue is increasing, the cost of sales and expenses is also increasing. unfortunately, this is a decrease, 13% to 10%, in the percentage of cost of revenue from 2020 to 2022, and this is also decrease in the percentage of revenue growth from 18% to 6% [1][3]. In the post-pandemic. As the pandemic eased in subsequent years, the pace of subscriber growth may have slowed down, therefore, the revenue growth rate and cost of revenue rate decreased after the pandemic.

2.2.1. Balance Sheet

In the balance sheet, there is a significant improvement in cash equivalent in 2020 and returns to a stable level after 2020 [3]. From 2020 to 2021, the long-term debt is decreasing, but the short-term debt is increasing. A decrease in long-term debt indicates a positive sign, which can contribute to lower interest expenses and improved financial stability. The pandemic may have accelerated the company's debt reduction strategy. On the other hand, Netflix chooses to use short-term debt for working capital needs.

2.2.2. Statement of Cash flow

In the statement of cash flow, the net cash provided by operating activities achieved positive cash flow from 2020 to 2022[1][3]. In addition, there is increased negative net cash provided by investing activities(from 2018 to 2022), and decreasing net cash provided by financing activities(from 2018 to 2022). An increase in negative net cash provided by investing activities suggests that Netflix is making significant investments, possibly in content creation and innovation.

For a streaming service like Netflix, content investments are a critical part of its business model. Without offering more products to customers Netflix will not be able to be the top streaming service forever. Innovation is necessary for Netflix to stay alive during and after the COVID-19 pandemic[6]. These investments can result in negative cash flows during the acquisition and production phases. I assume that Netflix gains substantial cash flow from revenue due to the increased subscription during a pandemic, which provides the company with a substantial pool of internal funds to finance its investments rather than relying more on external financing sources such as debt or equity issuances. As a result, the financing cash flow is decreasing from 2018 to 2022.

Thus, a reduction in external financing needs can reflect improved financial stability and the ability to fund operations and growth from internal cash flow.

2.3. Strategic

2.3.1. Investment

Content Acquisition: The investment and realization of original content has played an important part in the success of the company with Netflix identifying new streams of revenue from it, in addition to higher subscriptions [7]. Furthermore, Netflix has consistently invested heavily in content acquisition. This includes licensing content from major studios, securing exclusive rights to popular shows and movies, and producing original content. For example, Netflix had found a strategic advance on which they could rely, and they had decided to adapt the platform to a more specific range of viewers, the so-called Netflix for kids [7]. **Impact on Financial Results:** Content acquisition is a significant expense for Netflix, impacting its cost of revenue. However, it has been crucial in attracting and retaining subscribers, leading to revenue growth.

Market Position: Netflix's vast content library has helped it maintain a leading position in the streaming industry. Exclusive content has been a key differentiator, encouraging subscribers to stay with or subscribe to the platform.

2.3.2. International Expansion

Since Netflix is predominantly a subscription-based company, the expansion in international territory and thus the attraction of additional subscribers, enhanced a more considerable growth in its revenues [7]. Netflix embarked on a global expansion strategy, aggressively entering international markets to tap into a broader subscriber base. International expansion incurred initial costs related to market

entry and localization. However, it has contributed to substantial revenue growth as Netflix gained subscribers worldwide. Netflix is now available in nearly every country, solidifying its position as a global streaming leader. International markets represent a significant portion of its subscriber base and revenue.

3. Discussion

Netflix's financial metrics have been influenced by these strategies. According to the annual financial report, the cost of revenue such as expenses directly related to content acquisition, production, streaming delivery costs, and other operating costs [8]. While the strategy of investing more content-related has increased due to the pandemic situation, Netflix has started to attract a larger customer base. revenue has grown substantially, resulting in improved profitability over many years. Thus, the higher subscriptions during the pandemic phase led to higher revenue growth and free cash flow, as evidenced above the net cash provided by operating activity increases, net growth margin increases.

Netflix is very close to sustainable free cash flow and it is expected that Netflix is not dependent on raising external financing to fund day-to-day operations [8]. The company's long-term debt may have decreased due to content investments, instead, Netflix utilizes its substantial cash pool of internal finance to finance its content investment, thus, Netflix is less likely to rely on external debt financing, as evidenced by a decreasing debt-to-equity ratio and increasing negative cash flow provided by investing activities and decreasing cash flow provided by financing activities shown on the Statement of Cash Flow.

The COVID-19 pandemic played a pivotal role in Netflix's financial performance, driving substantial subscriber growth and revenue expansion [6]. However, this surge has subsided, necessitating a shift in strategy to maintain growth in a maturing streaming market.

In conclusion, Netflix's financial analysis provides essential insights into its achievements and challenges. While the company has demonstrated profitability, reduced long-term debt, and strategic adaptability, limitations such as declining profitability in 2022, liquidity constraints, and the need for sustainable growth strategies should not be overlooked.

4. Conclusion

This research has provided valuable information about Netflix's financial performance and its significant impact on the strategic approach on financial performance analysis. The results of this research demonstrate that Netflix's strategic approach exerts a profound effect on its financial analysis and performance. Such as content acquisition because of the COVID-19 pandemic, the profit margin growth, and long-term debt decreased as mentioned above.

It is important to acknowledge the limitations of this research. This analysis is based on publicly available financial data up to 2022, it does not include encompass Netflix's most recent financial data beyond that date, moreover, this paper only considers the relationship between the strategic approach and financial analysis, and does not consider other external factors, such as operational efficiency, currency exchange rates may also have impact on Netflix's financial analysis. To improve this research, a more detailed examination of Netflix's content strategy, regional market dynamics, and collection of long-term historical financial available data could provide a more concise understanding of its causality.

As the streaming industry continues to evolve and popularize, it is recommended that companies like Netflix remain adaptable and continue to invest in content diversification to stay competitive in the market because not only the broadcasts but also content producers face the greatest pressure for change [9]. Therefore, for safeguard the future revenue streams, Netflix will face many challenges if it does not invest more in content because the content is king in the entertainment market [9]. In

addition, they should pay attention to regulatory development and market unstabilization that may affect their operation decision, and creativity in content acquisition is crucial to Netflix to remain the customer base to stay success.

As mentioned above, innovation and exploration are significant for Netflix to be competitive. Future researchers can explore how the innovation and exploration affect Netflix. Moreover, Future research can investigate deeply about Netflix's financial analysis from a macro perspective [10].

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Enterprise Management and Risk Assessment Analysis Practice

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Abstract: Finance is the core competitiveness of the country. Since the reform and opening up, China's financial industry has developed rapidly and made historic achievements, but there are still many contradictions and problems that make it difficult to meet the requirements of high-quality economic development. First, the debt problem: China's enterprises, local governments and household sectors are all facing considerable debt pressure. Some enterprises and local governments have hidden debts, and the debt of the household sector is also increasing. This poses a risk to the stability of the financial system. Second, financial institution risk: Some financial institutions have risks, including credit risk and liquidity risk. Some non-bank financial institutions have relatively low capital adequacy ratios and are potentially at risk of default. Third, financial chaos: some financial chaos problems still exist, such as illegal fund-raising, online financial fraud and so on. These issues challenge the effectiveness of financial regulation and public trust in the financial system. Fourth, structural problems in the financial system: there are some structural problems in China's financial system, such as insufficient interaction between the banking sector and the capital market, and relatively low efficiency of financial resource allocation. These problems constrain the development of the financial system and sustainable economic growth.

Keywords: risk-return, finance, enterprise management

1. Introduction

This paper mainly explains the definition of finance, then explains the definition of money, and then explains the specific content of risk-return, and finally begins the theme of this paper, enterprise management and risk assessment

Finance is a systematic study of money, funds, and investments. It involves how to obtain, manage, and utilize funds, as well as making decisions on how to invest and allocate resources. Finance includes banking, securities, insurance, and other financial institutions. The core of finance is cross-time and cross-space value exchange. All transactions involving the allocation of value or income between different times and different Spaces are financial transactions. Finance is to study why, how and how cross-time and cross-space value exchange occurs. Like the Shanxi "ticket number" developed in the Ming and Qing dynasties, it is mainly for the purpose of remote value exchange, so it needs to be transported across the region [1].

Currency is a widely accepted and exchangeable tool for economic transactions. The government usually issues it and has legal value. Currency is used for buying and selling goods and services, as well as serving as a reserve and unit of measurement.

Asset pricing refers to the process of determining the price or value of an asset or security [1]. It involves evaluating the expected cash flows and risks of assets to determine reasonable pricing. Asset pricing models estimate the value of assets or securities by considering various factors such as market demand, supply, risk, and returns.

Risk return refers to the relationship between the potential risks faced in an investment and the desired return [2]. In the financial field, investors must balance the risks of investment with the expected returns. Usually, the return on investment is proportional to the risk. High-risk investments may bring higher returns, while low-risk investments typically have lower returns. Risk return analysis helps investors make decisions between different investment choices.

Enterprise management and risk assessment are one of the core elements for achieving sustainable development in enterprises. The following are some key points for practical enterprise management and risk assessment: First, Clarify the vision and mission of the enterprise: Enterprise management should always be guided by the long-term goal of the enterprise, clarify the vision and mission of the enterprise, and provide guidance for the decision and action of the enterprise. Secondly, set clear goals and strategies: Business management needs to set specific and measurable goals, and formulate corresponding strategies and plans to achieve these goals. Thirdly, Establish an effective organizational structure: Enterprise management should ensure that the enterprise has a reasonable and efficient organizational structure, clarify the responsibilities and authority of various departments and posts, and promote the flow of information.

2. Literature Review

Enterprise management refers to the organization, coordination, leadership, and control of various aspects of an enterprise to achieve its goals. In practical operations, enterprise management requires effective management at all levels from strategic planning to daily operations. This includes establishing clear goals and targets, effectively allocating resources, establishing effective communication and collaboration mechanisms, and continuously evaluating and improving performance.

Risk assessment refers to the identification, analysis, and evaluation of potential risks faced by enterprises, in order to take corresponding risk management measures in a timely manner. In practical combat, risk assessment requires a comprehensive analysis of the internal and external environment, identification of potential risks, and quantitative or qualitative assessment. The key to assessing risk is to determine the probability and impact of the risk, as well as to evaluate potential losses and the cost-effectiveness of risk response measures.

3. Practical Skills and Tools

Enterprise management and risk assessment require the use of various practical skills and tools. This includes strategic planning tools such as SWOT analysis, goal and indicator setting; Daily management tools such as performance management, project management, and team collaboration; Risk assessment tools such as risk matrix, risk event tree, and risk impact matrix. SWOT analysis is a commonly used tool for enterprise management and risk assessment. The empirical results show that in periods of financial boom and recession, the economic growth rate is low, and the financial crisis is easy to break out [3]. By contrast, in a financial normal period, economic growth is higher and the financial system is more stable. This means that economic growth and financial stability can be helped only when the financial cycle is in a relatively smooth and normal state, whereas, regardless

of whether the financial cycle is too hot or too cold, economic growth and financial stability will be significantly negatively affected. In addition, regardless of the stage of the financial cycle (boom, recession or normal), the increase in financial volatility is accompanied by a lower economic growth rate and a higher probability of a financial crisis, which means that the increase in financial volatility will not only significantly weaken a country's economic growth, but also lead to a significant increase in the instability of the financial system.

The steps for conducting a SWOT analysis in actual combat are as follows:

Strengths: Identify the unique resources, skills, and brand advantages of the enterprise in market competition. This may include patented technology, high-quality customer service, brand awareness, highly specialized employees, etc. Advantage analysis can help enterprises determine their core competitiveness in the market.

Weaknesses: Identify the weaknesses and shortcomings of the enterprise in competition, such as a lack of key technologies, weak supply chains, and imperfect management systems. Disadvantage analysis can help companies recognize areas for improvement in order to enhance their competitiveness and performance.

Opportunities: Identify opportunities in the external environment, such as market demand growth, technological innovation, regulatory changes, etc. Opportunity analysis can help companies seize opportunities, develop new products or enter new markets, in order to achieve growth and expansion.

Threats: Identify potential threats in the external environment, such as intensified competition, policy changes, emerging technologies, etc. Threat analysis can help businesses recognize potential risks and challenges, and develop corresponding risk management plans.

In summary, SWOT analysis is one of the practical tools for enterprise management and risk assessment. Analyzing the internal and external environment helps enterprises identify their strengths, weaknesses, opportunities, and threats, formulate corresponding strategies and action plans, and continuously learn and improve in practice.

Risk matrix, risk event tree, and risk impact matrix are all risk assessment tools widely used in enterprise management and risk assessment practices.

Risk Matrix: A risk matrix is a tool used for qualitative and quantitative assessment of risks. It divides the likelihood and impact of risks into two dimensions, usually plotted as a 2x2 matrix. The likelihood of risk can be divided into three levels: high, medium, and low, and the impact of risk can be divided into three levels: high, medium, and low. According to different likelihood and impact levels, each combination can be assigned corresponding risk levels, such as high risk, medium risk, and low risk. The risk matrix can help enterprises intuitively understand and evaluate the priority of different risks, and determine corresponding risk management measures. In order to solve the problem that the traditional risk matrix will produce a "risk junction" in the risk assessment study, which makes it difficult to rank the importance of risk events in the same risk level, a method based on the combination of risk matrix method and Borda order value method is proposed to study the risk assessment of urban buried gas pipelines. Firstly, the risk matrix method is used to classify the risk probability of each risk event, which will produce the problem of "risk junction". Then, the traditional risk matrix is modified by linear interpolation and Borda ranking. Finally, this method is used to evaluate the risk of a city's underground gas pipeline. The results show that the method can rank each risk event according to its importance and improve the accuracy of risk assessment results effectively. This method is used to evaluate the risk grade of a certain urban underground gas pipeline as medium risk. The research results can provide some reference for effectively preventing urban ground activity damage, design defects, equipment failure and other important risk events, and then reduce the incidence of urban buried gas pipeline failure and other accidents [4].

Risk Event Tree: A risk Event Tree is a tool for systematically representing and analyzing risk events and their possible outcomes. The risk event tree starts with a root node and is divided into

different branches. Each branch represents a possible outcome and ultimately reaches the leaf node, representing the final risk outcome. Each node can also represent the likelihood and impact of the result occurring. By constructing a risk event tree, enterprises can clearly understand the likelihood, impact, and causal relationships associated with risk events, help them identify and analyze potential risks, and develop corresponding management strategies. Conducting a risk analysis on nuclear plants using the dynamic event tree (DET) to improve the accuracy of consequence analysis of the system state significantly increases the number of event tree (ET) branches. Several methods have been developed to reduce the number of branches and event sequences of DET. In this study, we developed a new risk analysis method using a relatively small ET to estimate risk considering time changes in the system state of a target system, in a drastic short time. The main features of the proposed method are: to set some headings that cause the same branches on every event sequence outside of the ET to keep it small; to set the probability distribution function or cumulative distribution function of the time to activate each of the safety measures which have the monotonous relation to the risk; and to estimate the maximum and minimum risk values of every event sequence using these probabilistic distributions. The proposed risk analysis method can drastically reduce the time required for consequence analysis, i.e., the number of simulations is drastically reduced. Furthermore, conducting risk analysis by this method is proved to be equivalent to using a DET in principle [5].

Risk Impact Matrix: The risk impact matrix is a tool used to evaluate the degree of impact of risks on corporate or project objectives. It is used to determine the importance of different risk events to enterprise goals and help enterprises prioritize risk management. The risk impact matrix is usually composed of multiple columns, with each column representing a risk event and each row representing a goal or project element. By evaluating the degree of impact of each risk event and goal (usually in a qualitative manner), the corresponding cells of the matrix can be filled in. Then, based on the results filled in, the risk events that need to be focused on can be determined, and corresponding management measures can be selected.

These evaluation tools help enterprises effectively identify, evaluate, and manage potential risks, thereby improving their ability to respond to risks and providing an important basis for enterprise management decisions. When using these tools, appropriate adjustments and customizations need to be made based on specific situations and needs.

Enterprise performance and risk monitoring: In practice, enterprises need to continuously monitor and evaluate their own performance and risk situation. This can be achieved by establishing appropriate performance and risk indicators. The key to monitoring enterprise performance and risks is to collect and analyze relevant data in order to take timely measures to correct problems and prevent risks.

Regarding the value impact of oil companies and innovative technology companies, the following are some possible explanations: Oil companies, due to high profits and high dividends, but not expected to grow much in the future, if interest rate changes caused by central banks (such as the Federal Reserve) will lead to an increase in borrowing costs, which will have a greater impact on the profitability and stock value of oil companies. In addition, changes in interest rates may also affect the investment plans and capital expenditures of oil companies, thereby affecting their future profitability.

Compared to oil companies, innovation technology companies may not have high profits, pay low dividends, or do not pay dividends. For these companies, changes in interest rates caused by central banks may have a significant impact on their access to funds and investments, as they rely on investment and financing to achieve innovation and business development. Therefore, changes in interest rates may have a greater impact on the value of innovative technology companies.

It should be noted that when evaluating factors that affect the company's value, other factors need to be considered, such as industry prospects, the company's financial situation, and the competitive

environment. Therefore, in practical practice, analyzing the value impact of enterprises requires comprehensive consideration of various factors to develop appropriate management and risk assessment strategies.

The evaluation of future corporate financial development will be influenced by various factors, including macroeconomic environment, industry trends, market competition, management capabilities, and corporate strategy.

Firstly, the macroeconomic environment is crucial for the development of corporate finance. If the economy grows strongly, interest rates are low, and consumer confidence is high, companies have more opportunities to expand their business, increase profits, and invest. On the contrary, if there is an economic recession and financial instability, companies may face challenges and risks. Based on dynamic panel data of 68 major economies over the period of 1981-2012, this paper investigates the impact of financial cycle and financial volatility on economic growth and financial stability. The empirical results show that the boom and recession phases of the financial cycle are often associated with lower economic growth and a higher probability of financial crisis [4]. By comparison, in the normal phase of the financial cycle, economic growth is higher and the financial system is more stable. This indicates that both the overheating and overcooling of the financial system are harmful to economic growth and financial stability, and the reverse is true and vice versa. In addition, no matter what phases the financial cycle is in, larger financial volatility is always associated with lower economic growth and a higher probability of a financial crisis, suggesting that the increase in financial volatility is harmful to both economic growth and financial stability.

China's past ultra-high speed economic growth is not in line with the law of sustainable economic development, nor will it be the normal economic development, the achievements of the past 40 years are remarkable, but its hidden dangers and risks are also brewing, the economic growth in recent years is one of the problems. In the new era, the only way to prevent systemic risks is to rely on macroeconomic management. Macroeconomic management is of great significance in promoting the high-quality development of the market economy, resolving trade frictions, and resolving major risks in the market economy. In the future, under the premise of adhering to the leadership of the Party, macroeconomic management can make efforts from the construction of laws and regulations and the training of talents, and orderly solve many problems in the development of the market economy [6].

Secondly, industry trends and the competitive landscape also have a significant impact on the development of corporate finance. Some industries may have growth opportunities, while others may face difficulties. The company needs to closely monitor industry development trends and market competition to adapt to changes and achieve sustained growth. After Coase, Western scholars mostly regarded enterprises and markets as two different ways of coordinating the economic operation, and the choice of these two methods depends on the level of transaction or organizational costs. However, this view of Western scholars is basically based on the experience and facts of developed countries and is based on the analysis premise of developed market economy. In fact, for underdeveloped and developing countries with underdeveloped market economies, their markets and enterprises have not yet fully developed, and the pricing and enterprise mechanisms cannot fully and effectively play a role in coordinating economic operations. In this situation, although there is a mutual substitution between enterprises and the market in certain fields, in economic development, the two are mostly in a mutually promoting and promoting relationship [7].

Thirdly, the management ability of a company is crucial for financial development. Efficient financial management, risk management, and strategic planning are important factors in ensuring the financial development of a company. Companies need transparent and accurate financial reports, as well as effective risk management measures.)The rapid development of the market economy has brought numerous opportunities and challenges to the economic development of the world. In order to gain survival and development space in the fierce market competition, enterprises have gradually

realized the need to improve their performance through innovative management models. The management method of the excellent performance model has been verified through many practices and is in line with the current situation of economic globalization and market competition. The construction system has a certain degree of systematicity and logicity. Taking the excellent performance model as the framework for enterprise management innovation, combining the management methods of the excellent performance model with the operation and operation of the Guangdong Provincial Government Quality Award, and analyzing its development prospects, can improve the organizational and management capabilities of enterprises [8]. Research has found that the more risk warning information in annual reports, the lower the accounting robustness, and it is greatly affected by the degree of product market competition; The more intense the competition in the product market, the more significant the negative effect of annual report risk warning information on accounting conservatism. At the same time, it was found that deepening the degree of information asymmetry measured by financial data has become a transmission path for annual report risk warning information to reduce accounting conservatism. After further considering factors such as endogeneity and segmentation of accounting conservatism, the conclusion still holds. Research shows that accounting conservatism is a corrective convention for accounting information quality, Affected by the external governance environment of enterprise management's prediction of future risks and product market competition, the research findings not only make up for the long-standing neglect of unstructured data in accounting conservatism research, but also provide direct empirical evidence for the institutional arrangement and improvement of risk warning information and governance mechanisms [9].

Finally, the company's strategy and development plan are also crucial for financial development. The company needs to have clear goals and plans, as well as correct market positioning and product portfolio strategies. At the same time, the company needs to make flexible adjustments and decisions based on market demand and competitive environment. With the popularization of technologies such as the Internet, new technologies such as big data and cloud computing have emerged. These new technologies have played an increasingly important role in the development of the industry and have profoundly changed the direction of its development. Enterprise management in the big data environment also needs to actively make adjustments and changes, especially through the use of big data for management innovation and the convenience provided by big data to effectively improve traditional enterprise management approaches, Improve the scientific, effective, intelligent, and targeted nature of enterprise management, effectively improve the efficiency and quality of enterprise production and operation management, promote new development and improvement of enterprises in the big data environment, and promote the effective improvement of enterprise operating efficiency [10].

4. Conclusion

In summary, the evaluation of future corporate financial development needs to comprehensively consider multiple factors such as macroeconomic environment, industry trends, market competition, management capabilities, and corporate strategy. Only by correctly evaluating and adapting to these factors can companies achieve sustainable financial development. Based on the empirical results, several policy implications are obtained. First, considering the significant positive effects of financial development on firm innovation, deepening financial reform and promoting financial development will improve the financing environment, foster innovation, and promote technological progress and industrial transformation. Second, it is essential to continue the process of industrialization and opening-up. At the same time, for regions with weak fiscal capacity and scarce human resources (or low education levels), special attention should be paid to utilizing financial development to enhance

innovation-driven growth. Third, R&D activities should be encouraged through greater cultivation of creative talent, protection of intellectual property, and support for innovation.

Finance is a very good subject, even called an art, it has a lot of mysteries, you need to study it, understand the relationship between various factors, maybe a management system will lead to a series of benefits, or risk will lead to a series of chain reactions. But if people can master these secrets, it will be a good step forward in human thinking and analysis of employment based on the literature review, only by correctly evaluating and adapting to risk evaluation, risk events, enterprise management and so on can companies achieve sustainable financial development.

Only by correctly evaluating and adapting to these factors can companies achieve sustainable financial development.

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Economic Growth in China: The Impact of Globalization

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Abstract: Globalization is an intrinsic part of today's economic exchanges. This research investigates the impact of globalization on China's economic development. For inferences, it relies on a comprehensive literature review of relevant material published within the last 10 years. The focal themes in the literature review include knowledge transfer, trade expansion, and FDI. Consequently, the study concludes that globalization has had a substantial impact on China's economic development. It establishes that China has been able to close the technological divide, expand its industrial base, and boost productivity as a result of technology transfer in and out of the country. Furthermore, China has become a major exporter given the trade expansion involved in globalization. The resultant FDI has aided China's economic growth by facilitating infrastructural and industrial growth. China's human capital growth is enhanced by the transmission of knowledge through collaborations and educational exchanges. Future studies should, however, examine the nuances of economic growth through the globalization prism.

Keywords: Economic Growth, Globalization, Growth in export, Open trade policy

1. Introduction

Economic growth is a critical priority for many countries. Thus, many nations intentionally commit to macroeconomic resources which facilitate such growth. By definition, economic growth refers to the process by which a country realizes an increase in the production of goods and services. The need for economic growth paved the way for globalization as witnessed in the 21st century. Samimi and Jenatabadi defined globalization as the flow of factors such as capital, goods and services, technology, and knowledge across different regions [1]. The term alludes to the exchange function of resources across nations. As an important relationship, the nexus between globalization and economic growth saw the rise of different studies. Nonetheless, such studies have predominantly focused on the overall economic growth of all countries. Further investigation is needed to understand the specific nuances of the phenomenon in China. Additionally, the distributional consequences of globalization remain a relatively unexplored theme. Such information has the potential to enhance policymaking initiatives. Some of the topics that will be examined in relation to globalization and economic growth in China include technology transference, trade expansion, foreign direct investment (FDI), knowledge and human capital exchange, and increased competition. To generate its inferences, the current analysis commits to a comprehensive literature review of studies published within the last decade. As a resource, findings will help reinforce the criticality of globalization at a time when European countries are gravitating towards nationalism.

2. Literature Review

2.1. Technology Transference

Globalization has played a critical role in facilitating technological advancement in China. To begin with, globalization accounts for the transfer of technology witnessed in the past two decades within China. Since the country integrated globalization, more foreign businesses have been able to access the region. To facilitate the transfer of technology, such businesses commit to joint ventures with Chinese partners. In turn, Chinese businesses have profited from these alliances by receiving access to cutting-edge technology. In reflecting on the phenomenon, Kapustina et al. suggest that China demands that foreign countries create joint ventures for the transference of technology as a prerequisite for share capital among local companies [2]. The access allows such businesses to modify and integrate the technologies into their operations. Due to this, China has quickly improved its industrial capacity and closed technology disparities between itself and other developed countries.

The opportunity has been monumental for China as the companies integrate the technologies into manufacturing resources for increased production of goods and services. Essentially, according to Li et al, when enterprises gain the advantage of technological innovation, their products and services will be more pronounced in the global market [3]. As an allusion, it is a critical contention because it reinforces the immensity of technology as a bridge for increased productivity. In embracing the shift, China has been able to further the speed and efficiency of local production initiatives leading to accelerated economic growth. Technology is critical because it also reduces the overall costs that companies in the region have to contend with in driving production. Whereas previously, the companies in the region may have been forced to manually track the production process, technology allows them the freedom and flexibility to not only monitor but also alter the production process for greater efficiency.

Furthermore, the essence of globalization in China's economic growth is reflected in the mainstream culture of innovation and entrepreneurship within China. Today, Chinese companies are investing substantially in research and development (R&D) to stay at the forefront of technological breakthroughs. As a country, China has made enormous expenditures in R&D throughout the years, which demonstrates its dedication to technological advancement.



Figure 1: R&D Expenditures in the Chinese Manufacturing Industry between 2013 and 2017 in Billion Yuan [4].

As reflected in Figure 1, expenditure in R&D within China moved from 795.98 billion Yuan in 2013 to 1162.47 billion Yuan in 2017 [4]. Such an increase was precipitated by the country's shift in foreign policy, which saw the increased integration of globalization as the path to economic growth and sustainability. A thriving ecosystem for technological innovation has been formed in the nation via the establishment of research institutes, innovation centers, and technology parks. Such technological resources further draw both domestic and international talent to enhance the economic

development witnessed in the country. With such R&D resources, China cannot only spearhead the process of production, it is also able to influence and export its technological knowledge. The income generated from such exploits is then used to drive internal economic production and infrastructural growth.

Overall, advancements in technology, as a consequence of globalization, have made China a world leader in a number of areas. The nation has developed into a hub for innovation and a magnet for foreign investment in R&D. Today, Chinese businesses are the subject of millions of patents, making the country one of the most influential forces in the global technological trajectory. According to Zhang, the total number of patents filed in China stood at 4.2 million, where 3.28 million were owned by Chinese individuals and countries [5]. The development of intellectual property and the surge in innovation, as facilitated by globalization, have transformed China's economic structure into a knowledge-based economy. With the shift, the country witnessed marked economic growth in the past decade.

2.2. The Expansion of Trade

Equally, globalization has played a monumental role in driving trade expansion in China. In 2001, China joined the World Trade Organization (WTO), which marked its ascendancy in the world of globalization. In examining the shift, Garred argues that “China’s 2001 entry into WTO allowed it to benefit from improved access to foreign markets, including permanent most-favored-nation status in the United States” [6]. The allusion is critical because it points to the benefits China derived as a result of integrating open trade policies. With the expansion of trade, China was able to access new markets for the sale of its goods.

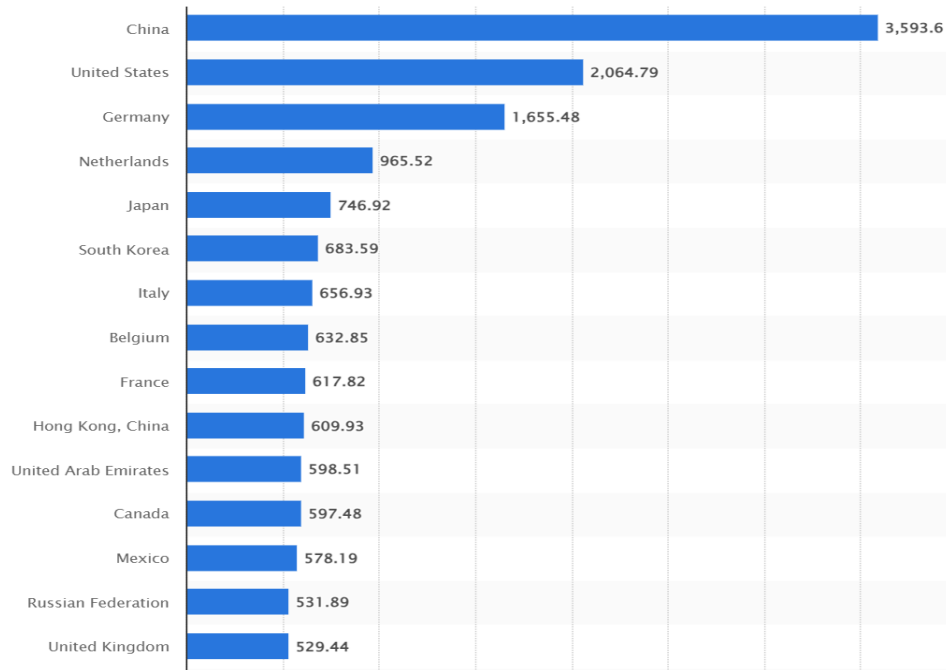


Figure 2: Global Exports Rates in US Billion Dollars in 2022 [7]

Thus, by 2022, China was the leading exporter on a global scale. Figure 2 Global Exports Rates in US Billion Dollars in 2022 [7]. As shown in Figure 2, China is the leading exporter in the world with exports of goods and services amounting to \$3,593.6 billion and is only subliminally rivaled by the US at \$2,064.79 [7]. There were various advantages for China from the growth in exports. First, it significantly increased the employment rates in the manufacturing industry. Such employment

increase can be traced to the renewed demand for Chinese products on a global scale. Therefore, more people in the region were able to partake in gainful employment culminating in improved per capita income. With better employment terms, China was also able to attract more human capital in the region to drive the economic agenda. The increase in employment aided in the country's urbanization progress and helped to absorb the excess labor in rural regions. Globalization provided China with the tools needed to spearhead its trading priorities, culminating in the current surge of Chinese goods and services across the world.

Additionally, the increase in exports fueled China's economic expansion by generating the necessary capital to spur internal infrastructural and production industries. Today, the manufacturing industry has emerged as a major contributor to the country's GDP. Export money spurred investments in infrastructure, technology, and other industries, boosting China's economic ascent. Since its integration into WTO, China's economy has grown so quickly that it has surpassed several wealthy countries to become the second-largest economy in the world. As shown in Figure 2, many countries, both in developed and developing countries, continue to trail behind the nation with regard to production [7]. Such a phenomenon is an indicator of economic growth because it translates to more capital and earnings for China from the sale proceeds.

In embracing open trade policies, as dictated by WTO, China was able to invite greater investment into its internal industries. Such investment enhanced the availability of capital for the many companies and investors in the region. With the capital, more companies were able to generate more goods and services for local and foreign traders. There is also a need to note that, due to China's low production costs and sizable consumer market, several global businesses moved their manufacturing operations to the country. Such a shift was more pronounced in the apparel industry. Such a shift led to the waning of conventional industrial hubs in rich nations and changed the dynamics of international commerce. China realized a new power on the global economic scale.

Presently, China is a key factor in international trade discussions as a result of its expanding influence in world commerce. China, one of the major trading countries, has had a great impact on establishing trade laws and forming international trade agreements. Its involvement in programs like the Belt and Road Initiative (BRI) and the Regional Comprehensive Economic Partnership (RCEP) further demonstrates its dedication to enlarging its trade networks [8]. Such networks are critical as bridges for economic growth as they streamline the existing relationships between China and other trading partners. With this influence, China can effectively lobby for better economic terms. When the terms are favorable, China can then further its interests and, hence, foster economic cooperation with other nations.

2.3. Foreign Direct Investment (FDI)

Increased foreign Direct Investment (FDI) has been one of the fundamental markers of globalization in China. By definition, FDI refers to the stake of ownership owned by a foreign country or investor in another company or resource within a separate country. In this context, it refers to the investment committed by other companies and countries in the Chinese economic market. With globalization, China was able to spearhead an economic resurgence predicated on the revitalization of existing manufacturing complexes. The growth was spurred on by the existence of a large number of laborers. Market dynamics saw the integration of low-cost labor to drive the manufacturing processes. Since the system was efficient, it enhanced external investors' willingness to invest in the manufacturing efforts. The country's large population also accounts for the increased FDI. Beyond the role of the population, in terms of low-cost labor, China's 1.4 billion residents offer an attractive consumer target for foreign companies and investors.

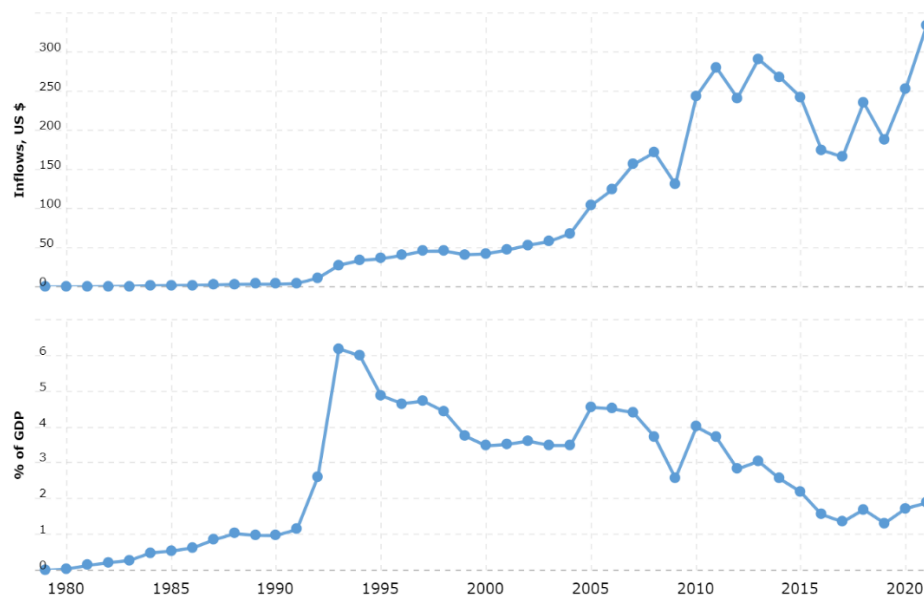


Figure 3: China's FDI Inflows Between 1980 to 2020 [9].

Figure 3 China's FDI Inflows Between 1980 to 2020 [9]. Figure 3 reveals that China's FDI inflows increased from a paltry \$50 billion in 2000 to over \$300 billion in 2020 [9]. Such monumental growth captures the essence of China's globalization efforts. While its percentage contribution to the economy has waned over the years, such a disparity attests to the growth of the economy. Thus, while FDI inflows accounted for about 3.5% of the GDP in 2000, it presently represents 2% of the existing GDP [9]. The statistic is a representation of the growth of the other aspects of the economy beyond the FDIs. Such a dynamic translates to greater economic strength given the diversity of revenue sources.

In reflecting on China's FDI increase, Paul and Mas contend that "the country's manufacturing sector has doubled its share of workforce and tripled its share of output; which, given the size of the Chinese economy and population, has increasingly made China 'the workshop of the world' [10]. Like India, China can also negotiate for better economic terms with the arriving FDI investors. Its population affords the country a stronger bargaining footing in engaging its investment partners. Opening the country to investors ensures that China is able to collect significant revenue in terms of taxes, which further go towards the improvement of the existing economic scales.

Additionally, FDI has brought modern technology and skills into China. Foreign businesses bring with them specialized expertise, managerial techniques, and technical know-how that can boost the native economy's production. Notably, foreign investors have eased the transfer of these abilities and technology through joint ventures and partnerships with Chinese partners. Thus, they have helped to modernize and upgrade China's industrial base.

Still, FDI growth in China is not limited to new inflows. The country's large capital investment has seen China pursue resources and economic opportunities across different regions. Mourao found that China targets markets with large populations and large forest areas, which accounts for the country's commitment of resources to 48 African countries by 2018 [11]. The formation of BRICS, as realized through globalization, provides China with access to even more countries. Such a phenomenon translates to more investment opportunities for China as BRICS members make up at least 40% of the world [12]. The ease of transaction between China and BRICS members translates to better terms for Chinese companies. The ease of trade between the countries also translates to China's ability to export labor to the target countries.

2.4. Knowledge Transference

Lastly, globalization has played a critical role in facilitating knowledge transference between China and other developed countries. Presently, economies are predicated on knowledge, skills, and expertise rather than the labor-intensive frameworks informing previous industries. To begin with, knowledge transference is reflected in the existing educational exchanges between Chinese students and foreign learning institutions. Such spread of information and skills is made possible by the promotion of educational interactions brought about by globalization. Notably, Chinese students who study overseas are exposed to various educational systems, cutting-edge research, and various viewpoints.

As a reflection of the increased inclinations by China to mainstream foreign learning for knowledge capital, Fu found that at least 20% of parents in China wish to have their children study abroad [13]. Most of the Chinese students who study abroad often go back to their home country upon the completion of their studies. By bringing back useful information and skills, these students have assisted in the growth of China's human capital. Consequently, China has committed significant resources towards financing such educational pursuits through the China Scholarship Council, which is financed by the national central government [14].

Moreover, international partnerships between Chinese and foreign academic and research institutions have aided in the advancement of collaborative research initiatives, technology transfer, and information exchange. The improvement of China's capacity for research and innovation, which has fueled economic growth, has been made possible in large part by these educational exchanges. Essentially, in partaking in trade agreements, as a result of globalization, China is allowed access to a shared pool of knowledge. Such knowledge helps shape the country's prevailing and future decision-making initiatives. China is also able to share its know-how in the knowledge labor market. It provides other countries with pertinent information and knowledgeable personnel to streamline productivity. From the initiative, China is able to secure significant revenue in terms of remittances.

3. Discussion

Overall, the literature review reveals that China's globalization efforts have spurred economic growth by facilitating technology transference, increasing FDI, expanding trade, and knowledge transference. To begin with, technology transference is critical because it allowed China access to technology driving its economic initiatives. Bridging the technology gap helped in mitigating the costs involved in producing goods and services. With the technology, China has been able to leverage its influence for greater yield in the global economic market.

Secondly, China's globalization efforts account for the expansion of trade in the country. Currently, China is both a member of the WTO and BRICS [15]. In forging such alliances, China has been able to position itself as a strong economic partner for many countries. The alliances also allow China access to different markets for the sale of its goods and services. The benefits of open trade are also witnessed in China's export of labor to regions such as China. Furthermore, globalization has played a critical role in cementing China's position as a center of knowledge diffusion. The country has been at the forefront of facilitating its student's access to foreign learning destinations. When students return to China, they are able to implement the knowledge in driving the existing economic activities. Increased knowledge among the students in a globalized also allows China to export its labor. The resultant remittances from abroad ensure China is able to draw the capital needed to oversee its production initiatives

4. Conclusion

In conclusion, the current research proves that globalization has played a key role in driving China's economic growth. Some of the benefits due to China from the shift include FDI increase, external and internal technology transference, knowledge transference, and expanded trade. While globalization has had a huge impact on China's economic progress, there are still certain gaps that need to be addressed by future studies. The need for greater study on the nuances of globalization's influence on China is one of the existing gaps. This study, like many others, concentrates on the overall economic development without considering the distributional repercussions. Future studies should examine how globalization affects various parts of China and evaluate how it affects income disparity. Thus, there is a need for more nuance on how globalization has affected income inequality in China. Further studies are also required to comprehend the long-term viability of China's economic development model. For instance, there is a need to establish the impact of China's globalization efforts on the environment.

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The Trend and Spillover Effect of Fed's Interest Increase Policy

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Abstract: Since 2022, the Federal Reserve has started a new round of rapid rate increase process due to the continuous rise in inflation. However, due to the combined effects of the epidemic and the conflict between Russia and Ukraine, the impact of the current Fed rate hike on the global economy and finance is different from previous cycles. Based on the recent stance of the Federal Reserve, the market generally judges that the current round of interest rate increase cycle of the Federal Reserve has come to an end. This paper discusses when and how the Federal Reserve will cut interest rates. At the same time, relevant suggestions are put forward on how to prevent the spillover effect of the Fed's interest rate hike. Through way of qualitative analysis, the author believes in how to balance the three goals of inflation elimination, employment stabilization and financial stability, or the main line of the monetary policy decision of the Federal Reserve in the future.

Keywords: federal reserve, interest rate rise, spillover effects, monetary policy

1. Introduction

In May 2023, the Federal Reserve announced after the interest rate meeting to increase the target range of the federal interest rate by 25bp to 5%-5.25% and continued to reduce the scale as planned (with a monthly cap of US\$ 95 billion). At the same time, the meeting did not provide any guidance on raising interest rates, nor did it make a decision to "suspend interest rate hikes" in June [1]. It is expected that whether the Federal Reserve will raise interest rates again in the future will depend entirely on data.

The key message in the statement of this meeting is that the Federal Reserve no longer calls "further tightening is appropriate" or emphasizes the "full tightening" position, but hopes to achieve "further tightening" through the lagging effect and cumulative effect of monetary policy.

In the speech segment of the press conference, Powell, the chairman of the Federal Reserve, still talked about bank risks at the beginning, stressing that the banking industry is still "sound and flexible" and that credit conditions are expected to shrink further, thus suppressing economic activities, but the extent is uncertain. At the same time, the statement of the Federal Reserve on employment and inflation has changed subtly. On the employment side, the Federal Reserve thinks that the labor market is returning to a balanced state and the tension has eased somewhat, because the number of vacancies in February and March continued to fall more than expected, reducing the gap between labor supply and demand from more than 5 million to about 3.5 million; On the inflation side, although it stressed that it was still concerned about the inflation risk, it deleted the expression

"too high" about inflation. In order to be cautious, Powell still stressed that "if it is necessary to further tighten monetary policy, he is prepared to take more measures."

During the question-and-answer session, Powell responded to many market concerns. With regard to the economic recession, although more members of the Federal Open Market Committee (FOMC) believe that the probability of a mild recession at the end of the year in the United States is higher, Powell personally still believes that the probability of escaping the recession is higher than the probability of a recession, based on the resilience still derived from the labor market. As to whether to consider adjusting the inflation target to 3%, Powell still maintains the previous view that achieving the 2% inflation target is the most urgent matter and raising the inflation target is not on the agenda. Powell did not respond positively to whether to cut interest rates by the end of 2023. Instead, he stressed data dependence—if the fundamentals of the year did not deviate from the path of the March Economic Projections Digest (SEP), it would not be appropriate to cut interest rates by the end of the year. Powell's estimate of the "slope" of US inflation downward in the second half of the year is more conservative than that of the market.

On the whole, the resolution of the Federal Reserve meeting in May was basically in line with the market expectations, and the statement was partial to "pigeon". Although it is not clear at this meeting whether to suspend the interest rate hike in June, the probability of the last rate hike in May is very high. The monetary policy stance pursued by the Federal Reserve corresponds to the "higher for longer" path of raising interest rates. Judging from the recent situation, "higher" in "higher for longer" has been basically realized, but the timing of the end of "longer" (i.e. the timing of the rate cut) is still uncertain. In the next stage, the Federal Reserve may gradually shift its attention from "inflation" to "stagnation" in the fundamentals, pay more attention to bank risks and credit crunch and shift the labor market from "equalization" to "substantial weakening" (such as a significant drop in new non-farm payrolls and a trend upward in the unemployment rate), and then adjust the policy guidelines in a timely and flexible manner.

With the end of the Fed's interest rate hike approaching, the timing and rhythm of the rate cut will become the focus of the next stage of the market game. As the central bank of the world's largest economy and the international status of the US dollar in the world, the changes in the monetary policy of the Federal Reserve have a great impact on the global economy and finance. It needs to pay close attention, strengthen research and judgment, and take countermeasures based on the actual situation.

2. Introduction to Relevant Theories

The trigger for the Fed to cut interest rates is not a single condition, but a combination of fundamental conditions, financial instability and political pressure, with different priorities. Referring to several interest rate-raising cycles of the Federal Reserve since 1958, the average time for the terminal interest rate to remain high is 6.5 months, with a median of 5 months; The longest is 15 months (2004-2007) and the second is 12 months (1958-1960); The shortest period is only three months, and there have been three times in all, namely, 1972-1974, 1977-1980 and 1983-1984. The first two times correspond to the "hard landing" (i.e. recession) of the US economy after the "First Oil Crisis" and "Second Oil Crisis", respectively [2]. The third time is the "soft landing" of the US economy after the interest rate hike implemented by Volcker when he was the chairman of the Federal Reserve. The second was 4 months, from 1980 to 1981 and from 1988 to 1989 respectively. There were also two five-month events, from 1965 to 1967 and from 1994 to 1995. There were seven times when the interest rate remained high for less than or equal to five months, accounting for nearly half of the total. This shows that the historical endpoint of the interest rate increase is not long, even in the era of "big stagflation"[3]. In conclusion, the reason why interest rates remained high for a short period of time, or because the terminal interest rate was too high and monetary policy was too tight, led to great economic or financial pressure, such as three interest rate cut cycles in the era of "great stagflation"

[4]; Or because the inflationary pressure is already relatively small, and the Federal Reserve has chosen to "walk against the wind" by raising interest rates ahead of time, so that inflation will have an early inflection point and interest rates can be cut faster.

3. Factor

3.1. Inflation

A return to 2% inflation or the establishment of a downward trend in inflation are not necessary conditions for a rate cut [5].

Although the original intention of the Federal Reserve to raise interest rates is basically to stabilize prices, not all of the rate cuts indicate that prices have stabilized, much less that the inflation target has been achieved. At the start of the previous 12 interest rate cut cycles, inflation was in the downward range on 8 occasions. The timing of the rate cut lags behind the high inflection point of inflation by an average of 5 months (with a median of 3.5 and a maximum of 18 months). Therefore, even if the pressure of "inflation" is still great in the short term, the Federal Reserve can still choose to cut interest rates when the expectations of "stagnation" continue to strengthen or financial instability. Financial stability was the main consideration when the Federal Reserve cut interest rates in September 2007.

3.2. Labour Market

The labour market remains "very tight", but signs of a marginal slowdown are increasing.

The labor market in the United States is still very tight. The reasons for the imbalance in labor supply and demand are the lack of elasticity of supply and the resilience of demand. In February 2023, the unemployment rate in the United States was 3.6%, and the actual unemployment gap may reach -1.7% [6]. The number of vacant posts and the vacancy rate were 10.8% and 6.5% respectively, and the corresponding number of vacant posts per unemployed person was 1.9, which were all in the historical high score range. The employment rate and labor force participation rate have not yet returned to their pre-COVID-19 levels, with gaps of 0.9 and 0.8 percentage points respectively.

However, the sign that the labor market margin in the United States is weakening cannot be ignored. The turning point in aggregate always begins with the structural weakness. By the end of February 2023, the unemployment rate of the "vulnerable groups" represented by Hispanics had started to rise significantly: the low point in November 2022 was 4.0% [7], followed by three consecutive months of upward movement, rising to 5.3% in February 2023. The number of employees in the "temporary help service" has decreased for 4 consecutive months from the previous 3 months; The momentum of the Labor Market Conditions Index (LMCI) has been negative for 6 consecutive months, all showing signs of marginal weakening.

LMCI has certain guiding significance for the conversion of the policy stance of the Federal Reserve.

There is a positive correlation between the level of LMCI and the federal funds rate [8]. The results of the univariate regression based on the Logit model show that the LMCI level can explain 40% of the federal funds rate. Intuitively, the starting point of the rate cut cycle mostly falls in the falling range of LMCI level, i.e., the negative range of LMCI momentum value, for example, July 1995, December 2000 and September 2007 all meet this feature.

After the COVID-19 outbreak, the high point of LMCI level has appeared in February 2022 (1.43), and the momentum value of LMCI has been negative for five consecutive months from November 2022 to March 2023 (the absolute value tends to converge). Overall, the US labor market is weakening on the margins. If the momentum value of LMCI accelerates downward, the conditions for the Federal Reserve to cut interest rates may be more adequate.

3.3. Inflationary Pressure

The timing of the rate cut deviates from the peak of the economic cycle by a small margin, and whether it leads or lags depends on the inflationary pressure [9].

Based on the experience of nine economic recessions in the United States history, it can be seen that the deviation between the point at which the Federal Reserve cut interest rates and the apex of the economic cycle determined by the National Bureau of Economic Research (NBER) is relatively small, with the average value leading by about one month (i.e. synchronizing with the apex of the cycle), and the median value lagging by about two months, but the distribution is relatively scattered. Specifically, in the first five recessions, the time point of the Federal Reserve's interest rate cut lags behind the starting point of the recession, of which 3 times lag by 2 months, 1-time lag by 3 months, and 1-time lag by 10 months (1972-1974). In the four recessions since the 1990s, interest rate cuts have been ahead of recessions at 14 months, 3 months, 4 months and 8 months in turn.

3.4. Financial Risk

Financial risk is an important condition that forces the Federal Reserve to "emergency" turn.

If the Federal Reserve raises interest rates, it will curb aggregate demand through credit contraction, which will easily lead to positive feedback of "monetary contraction-credit contraction-economic slowdown-financial risk-economic recession". So the latter part of the rate-raising cycle often corresponds to some form of financial risk (within the US or in other economies) [10], such as the "pretty 50" crash in the "big stagflation" era; In the early 1980s, under the "Volcker shock" of the storage and loan crisis and the real estate bubble; The Latin American debt crisis and the dotcom bubble in the Greenspan era; And the sub-prime crisis of the Bernanke era. Therefore, financial risk is also an important dimension that forces the Federal Reserve to turn.

4. Conclusion

On the whole, taking the bankruptcy of Silicon Valley banks in March 2023 as the turning point, the policy stance of the Federal Reserve may gradually shift from a single inflation suppression to a balance between inflation and financial risks. The author believes that in the coming period of time, the priority of anti-inflation in the decision-making of the Federal Reserve will tend to be downward, the priority of financial stability and maximum employment will tend to be upward and will dominate in the second half of 2023, prompting the Federal Reserve to cut interest rates. As mentioned earlier, the Federal Reserve may cut interest rates anytime, depending entirely on exogenous factors. Under the benchmark assumption that the recession will be fulfilled during the year, the conditions for interest rate cuts at the end of 2023 are relatively adequate. In the second half of the year, the Federal Reserve needs to guard against the risk of excessive monetary policy tightening rather than the risk of premature easing. In terms of the timing of the rate cut, financial stability is the biggest variable. At present, any variable of inflation, employment and financial stability exceeding expectations may change the "preset" policy path of the Federal Reserve. Although market participants can "snatch", in terms of policy analysis, it is more important to clarify the logic and conditions than to judge the timing. This paper is only a summary of some relevant issues and key points of the Federal Reserve's monetary policy based on historical data for reference. Relevant institutions can study the direction of the Fed's monetary policy.

Acknowledgements

Throughout the writing of this paper, I have received a great deal of support and assistance.

I would first like to thank my supervisors, Michael Simkovic and Qingmin Hao, whose expertise were invaluable in formulating the research questions and methodology. Your insightful feedback pushed me to sharpen my thinking and brought my work to a higher level.

I would particularly like to acknowledge my members, Tianlai Li and Xiaoyue Wu, for their wonderful collaboration and patient support

I would also like to thank my tutor, Hanyu Zhang, for her valuable guidance throughout my studies. You provided me with the tools that I needed to choose the right direction and successfully complete my dissertation.

In addition, I would like to thank my parents for their wise counsel and sympathetic ear. You are always there for me.

Finally, I could not have completed this dissertation without the support of my friends, Jiaxuan Wang and Yiran Wu, who provided stimulating discussions as well as happy distractions to rest my mind outside of my research.

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Evolution Trends and Market Impact Analysis of Fintech: Based on the Case Study of Williams

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Abstract: The development of financial technology is a double-edged sword, which not only breaks the traditional technical barriers between financial enterprises and technology companies but also makes finance and technology fully integrate together and release much economic vitality. But at the same time, the regulatory problems brought by financial technology and the uncertainty of the development of the industry have also produced a certain negative threat to the market. As a third-party payment company, Williams Company has made many pioneering efforts in the development of financial technology and has also made a series of achievements in the past years. Taking the development of this company as a case study, we will discuss the evolution trend of financial technology and the problems existing in the development process of financial technology, which will open our vision, strengthen supervision and promote scientific and technological progress. It is of obvious value.

Keywords: financial technology, Market change, Williams & Company

1. Introduction

Future developments in fintech will continue to focus on areas such as blockchain, data analytics and artificial intelligence, mobile payments, and digital currencies. Through technological innovation and the development of startups, fintech has changed people's lives more and more deeply.

The evolution of financial technology can be traced back to the 1980s. With the development of information technology and the enhancement of digitalization of financial business, financial technology has developed rapidly. In the 1980s, the financial technology represented by the automatic teller machine (ATM) showed people the impact of technological progress on financial development, allowing customers to withdraw money and check their account balances within non-bank working hours for the first time [1]. In the 1990s, telephone banking and Internet banking were introduced successively, both of which brought great convenience to people. Telephone banking allows customers to make account inquiries, transfers and transactions over the phone. The advent of the Internet banking system allows customers to conduct account management and financial transactions over the Internet. In the 2000s, electronic payment emerged, including third-party payment platforms (such as Alipay, PayPal, etc.) and mobile payment applications, greatly facilitating e-commerce and offline consumption. Digital identity verification technology has also developed rapidly, improving the security of financial transactions through biometrics (such as fingerprints, facial recognition, etc.) and other identity verification technologies. In the 2010s, new technologies represented by the

Internet of Things and big data entered people's attention, blockchain technology and decentralized distributed ledger technology increased the transparency and security of transactions, and promoted the emergence of cryptocurrencies such as Bitcoin. Big Data analysis Through the collection and analysis of massive data, financial institutions can better understand customer needs and make personalized product recommendations. Entering the 2020s, financial institutions are leveraging big data and intelligent algorithms to predict market movements, quantify trades and improve customer experience. Governments around the world are encouraging the spread of non-cash payment methods, driving more electronic payments and digital financial services. As fintech continues to evolve, more innovative technologies will emerge in the future, such as virtual reality, the Internet of Things and quantum computing, which will continue to transform financial business and user experience [2].

Financial technology (Fintech), a field that combines financial services and technological innovation, has already had a broad impact on the financial industry. In the future, fintech is expected to continue to grow in the following areas:

Application of blockchain technology: Blockchain, as a decentralized ledger technology, can provide more secure, transparent and efficient transaction and settlement services. In the future, Fintech will apply blockchain technology more widely in the fields of cross-border payment, asset management and smart contracts, so as to achieve more convenient financial transactions and contract execution.

The application of data analysis and artificial intelligence: Financial institutions have a large amount of data, and through the application of data analysis and artificial intelligence technology, they can better understand and predict market dynamics and provide more personalized, precise and comprehensive financial services. In the future, fintech will further develop technologies such as data mining, machine learning and natural language processing to provide users with more intelligent financial products and services [3].

The popularity of mobile payment and digital currency: Mobile payment has been rapidly developing in many countries, and in the future, fintech will pay more attention to the security and convenience of mobile payment and promote the popularity and application of mobile payment. At the same time, with the emergence of digital currencies (such as Bitcoin), fintech will also play an important role in the transaction and management of digital currencies, promoting the development and popularization of digital currencies.

Rise of Fintech startups: With the development of the fintech industry, more and more startups have emerged, offering new solutions in areas that cannot be met by traditional financial institutions with flexible and innovative thinking. In the future, fintech startups will continue to rise, driving change and innovation in the financial industry.

2. The Development and Innovation of Williams Company in the Context of Fintech Development

2.1. Introduction of Williams Company

Founded in 2011, Williams Company is a professional company engaged in third-party payment management. As a global enterprise, Williams is committed to the fields of foreign exchange trading, financial technology innovation, mobile payment and digital currency development at home and abroad. Over the years, the company has won the trust and recognition of a wide range of customers around the world, with more than 500 customers currently using its services. First, Williams & Company has a wealth of experience and expertise in forex trading. As a third-party payment management company, the company provides convenient and efficient foreign exchange trading services at home and abroad, and provides clients with comprehensive foreign exchange trading solutions. Through reasonable risk control and trading strategies, Williams is able to meet the needs

of different clients and help clients achieve better capital management and investment appreciation. Secondly, Williams is actively engaged in the field of financial technology innovation. With the rapid development of technology, the financial sector is also constantly changing and innovating. Taking full advantage of advanced technological means, Williams is committed to developing and applying the latest fintech to provide customers with more secure, convenient and intelligent payment solutions. Through continuous innovation, Williams is able to enhance the transaction experience for customers, while also bringing more room for business growth. In addition, Williams is committed to advancing the development of mobile payments and digital currencies. With the popularity of smartphones and the rise of the concept of digital currency, mobile payment and digital currency are gradually becoming the trend of future payments. Williams Company has deeply researched and developed the technologies and applications in these fields, continuously providing more convenient and secure mobile payment solutions, and also actively participates in the research and promotion of digital currency to provide customers with a full range of payment services. With its high-quality services and global layout, the company has reached more than 500 customers worldwide and is expected to grow by more than 35 per cent in the next three years. Williams Company will continue to focus on providing customers with better payment solutions through technological innovation and quality services [4].

2.2. Current Status of Fintech Development of Williams Company

Williams has developed rapidly in the field of financial technology, with a wide range of services covering payment, transaction, loan and risk management. The development of fintech has driven the growth of the company's business and improved profitability. In addition, Williams has devoted significant management and technical personnel resources to fintech development to ensure that it remains ahead of the competition in the market.

Williams is involved in a wide range of services in the fintech sector. First, they offer online payment and money transfer systems that allow users to easily make electronic payments and transfers. Second, Williams has developed a financial trading platform, which provides investors with convenient trading channels for stocks, bonds and futures. In addition, they provide loan and credit evaluation services to help users access personal and business loans and assess borrowers' credit risk. Williams has also developed risk management systems for monitoring and managing portfolio risk to protect clients' interests [5].

Fintech plays an important role in Williams' business and has a significant impact on the company's operating income. Due to the rapid development and innovation of fintech, Williams Company's revenue continues to grow. Fintech has brought more users and trading volumes to the company, boosting its profitability [6]. By introducing advanced fintech solutions, Williams has maintained a competitive edge in the market, increasing the number of business partners and customers and contributing to revenue growth.

Williams attaches great importance to the development of fintech and has invested a lot of resources in fintech managers and technicians. The company has a dedicated fintech team consisting of experienced financial and technology professionals. These managers are responsible for setting strategic plans and business direction to ensure the company remains at the forefront of the fintech sector. Technicians are responsible for developing and maintaining the company's fintech products and systems, guaranteeing the stability and security of their operation. Due to the rapid development of fintech, Williams will continue to recruit and develop people with financial and technical backgrounds to ensure that the company remains innovative and competitive in a highly competitive market.

2.3. Problems in the Development of Fintech at Williams

First, Williams Company has problems with the insecure use of financial technology. With the rapid development of fintech, financial transactions are increasingly dependent on networks and electronic systems. However, this also gives hackers and cyber attackers the opportunity to break in and steal sensitive data [7]. Williams' fintech applications without adequate security safeguards could result in serious financial losses and reputational damage due to issues such as data breaches, cyber-attacks or network viruses.

Second, Williams also has difficulties in the supervision of fintech companies. Fintech companies face specific regulatory challenges, as technological innovation tends to be faster than regulators' regulations and policies are updated. This creates regulatory risks for Williams, which can involve compliance issues, data privacy protection and user rights protection. If the company fails to take proper regulatory compliance measures during the development of fintech, it may face risks such as fines and suspension of business for rectification.

Thirdly, Williams Company's inadequate disclosure of corporate information in the development of financial technology is also a problem. Since fintech involves a large amount of user data and personal privacy information, users need to have a full understanding and trust in the transparency of the company's data processing and use. However, Williams may have deficiencies in information disclosure, lacking the necessary transparency and communication, resulting in lower trust among users in its fintech products and services. This could lead to a loss of users, which in turn could affect the company's market share and competitiveness.

3. Williams Company's Financial Technology Development Strategy

In the development of financial technology, Williams Company has problems such as insecurity, difficult supervision and insufficient information disclosure. The company should strengthen the security management of the use of fintech, pay attention to regulatory compliance, strengthen communication and cooperation with regulators, and improve the transparency of information disclosure, so as to enhance the competitiveness and sustainable development ability of the company in the fintech industry.

With the rapid development of fintech, cybersecurity threats have become increasingly serious. Therefore, in order to protect the security of customers' information and funds, Williams should strengthen information security management and take comprehensive preventive measures, including encryption technology, network monitoring and vulnerability repair, to reduce potential security risks [8]. Formulate laws and regulations applicable to fintech, clarify the entry conditions, business scope, and risk management requirements of various fintech institutions, and provide a legal basis for the healthy development of the fintech industry. Establish a dedicated fintech regulator responsible for supervising fintech companies and projects to ensure compliance with relevant laws, regulations and standards. Regulators should be staffed with professionals with expertise in technology investment and regulation. Formulate risk management requirements for scientific and technologically innovative financial products and services, and require fintech enterprises to establish a sound risk management system and monitoring mechanism. For fintech projects that involve sensitive areas such as large transactions, user privacy and data security, more stringent risk assessment and review should be conducted. Establish a sound FinTech data security protection system, requiring FinTech companies to strengthen user data protection measures to prevent personal privacy disclosure and data abuse. For fintech projects with high risks, data security audits and supervision should be strengthened to prevent cyber-attacks and financial crimes. Strengthening the supervision of fintech requires the government, regulators and fintech enterprises to work together to ensure the healthy

development of the fintech industry, and safeguard the stability of the financial market and the interests of financial consumers.

At the same time, Williams Company should also focus on regulatory compliance. There are many regulations and policies involved in the fintech industry, and companies need to understand and comply with relevant regulations to ensure legitimate operations. Therefore, companies should establish a sound compliance management system to ensure business operations are in line with regulatory requirements.

Communication and cooperation with regulators are also important factors in enhancing a company's competitiveness and sustainability. Williams should maintain close contact with regulators, keep abreast of the latest regulatory information and policy developments, and actively participate in industry discussions and compliance training. In addition, the company should also take the initiative to establish a good communication channel with the regulator, report the business situation in a timely manner, and accept the guidance and supervision of the regulatory authorities. Fintech companies need to step up disclosure to increase transparency, enhance investor confidence, and avoid potential financial risks [9]. Establish a more standardized information disclosure system, formulate clear information disclosure policies and operational guidelines, and specify the content, frequency and channels of disclosure in accordance with applicable laws and regulations and market requirements to ensure the accuracy and timeliness of information. Strengthen the disclosure of the balance sheet and fully disclose its balance sheet status, including the size and composition of various assets, as well as the types and repayment of debts, which will help investors to fully understand the risk tolerance of enterprises. Disclose key indicator data such as number of users, transaction volume, gross margin, etc., so that investors can evaluate the business condition of the company. At the same time, enterprises should interpret and analyze these data to help investors better understand the development potential and risks of enterprises. Fintech companies should establish independent audit and risk management bodies to conduct comprehensive reviews and supervision of information disclosure. Ensure the authenticity and integrity of information, and promptly identify and solve potential risk problems. Fintech companies should actively communicate and interact with investors, regulators and other stakeholders, respond to investor concerns, answer questions, and provide important information to relevant parties in a timely manner. By carrying out regular investor relations activities, strengthen the contact between enterprises and investors and establish a good relationship of trust. Through the implementation of the above five countermeasures, fintech companies will be able to enhance information disclosure, improve transparency, enhance investor confidence, and promote the sustainable development of enterprises. Fintech enterprises should establish independent auditing and risk management institutions to conduct comprehensive reviews and supervision of information disclosure. Ensure the authenticity and integrity of information, and promptly identify and solve potential risk problems. Fintech companies should actively communicate and interact with investors, regulators and other stakeholders to respond to investors' concerns, answer questions, and provide important information to relevant parties in a timely manner.

The transparency of information disclosure is one of the key factors to enhance a company's competitiveness. Williams Company should strengthen its information disclosure work and provide investors, customers and regulators with sufficient information, such as the company's operating conditions, risk management, etc., in order to increase transparency and enhance market trust [10]. At the same time, Williams should strengthen internal information management, protect the privacy of customers and comply with relevant privacy protection laws and regulations.

4. Conclusion

To sum up, this paper studies the development trend and market influence mechanism of fintech. Under the current market environment, the progress of fintech enterprises in technology has formed

a positive driving effect on the development of the financial market. However, in the complex market environment, the lack of supervision may also cause the loss of market order. Williams Company should strengthen the security management of the use of fintech, pay attention to regulatory compliance, strengthen communication and cooperation with regulators, and improve the transparency of information disclosure. These measures will help enhance the company's competitiveness and sustainability in the fintech industry.

Acknowledgements

Looking back on the course of my study, I am truly grateful to the mentors who helped me and encouraged me. The first one is to thank Professor xxx, my tutor. I spent a lot of energy on the final draft of my thesis. During my promotion period, I would like to thank my teacher for his care, love and tireless teaching. At the same time, I want to pay tribute to all the teachers who taught me and cared about me.

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The Impact of China's Carbon Market Trading on the Production Cost of Enterprises

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Abstract: The growth of China's carbon market, from its origin to its current size, demonstrates the country's dedication to corporate involvement and carbon reduction. Businesses' operations, risk management, investor relations, innovation culture, and level of global competitiveness are all profoundly impacted by carbon trading. It elevates sustainability from a policy compliance to a long-term success strategic necessity in a climate-focused world. The significant implications of China's carbon market on company behavior are thoroughly examined in this essay, including how they affect production methods, innovation, social responsibility, goal-setting, and future directions. Considering industry differences, profit consequences, and increasing investments in ESG principles, it also analyses their impact on business carbon emissions and financial indicators. In the end, the paper explores the complex connection between carbon emissions and business practices, highlighting the wide-ranging ramifications of China's carbon trading market on enterprise operations and sustainability strategies.

Keywords: Carbon Market Trading, China, Carbon emission

1. Introduction

When it comes to climate change and global warming, one topic that gets a lot of attention is the impact of excessive emissions of greenhouse gases on the Earth's climate system. Rising global temperatures, frequent extreme weather events, and rising sea levels have aroused widespread concern and concern from the international community. In response to this threat, the international community has taken a variety of measures. Under the Paris Agreement, countries are required to commit to reducing greenhouse gas emissions. Carbon trading is an internationally implementable mechanism that helps countries meet these commitments. As of the end of 2020, the carbon market had successfully executed its agreements over a period of five to six years. In 2017, China initiated a nationwide carbon market, marking its inaugural inclusion of the electricity sector. Drawing from the favorable outcomes of the carbon market's trial phase, the national carbon market formally entered trading operations in July 2021. The disparities observed between these two carbon markets serve as a factual groundwork for examining how China's carbon market pilot might influence technological innovation within corporate entities [1]. Understanding the historical development of China's carbon trading market is crucial. It provides context for evaluating its influence on corporate behavior. Over

the years, China has progressed from laying the groundwork for the market to implementing pilot programs and expanding coverage. Each milestone reflects the nation's commitment to carbon reduction and sets the stage for corporate engagement. The impact of carbon trading on enterprises is far-reaching and multi-dimensional. It reshapes their economic incentives, operations, risk management strategies, investor relations, innovation culture and global competitiveness. Carbon trading changes the corporate landscape, moving sustainability from a mere compliance requirement to a strategic imperative for long-term success in a world focused on mitigating climate change [2]. This article will embark on a comprehensive exploration of the profound impact of China's carbon trading market on corporate behavior. This article will encompass a thorough examination of the development milestones that have shaped this market's evolution. Moreover, the article will delve into a detailed analysis of how the emergence of the carbon trading market in China has influenced various facets of corporate behavior. From production practices to innovation, social responsibility, goal-setting, and future development directions, this article will unveil the transformative effects of this market. Additionally, the article will dissect the market's impact on corporate carbon emissions and financial indicators, considering the heterogeneity of industries, implications for profits and costs, and the burgeoning investment in Environmental, Social, and Governance (ESG) principles. The main purpose is to explore the interaction between carbon emissions and corporate behavior.

2. The development of China's Carbon Trading Market

The inception and evolution of carbon markets have triggered a transformative shift in corporate behavior, compelling businesses to reassess their environmental strategies and engage in proactive emissions reduction initiatives. These markets, primarily designed to combat climate change and mitigate greenhouse gas emissions, operate as a mechanism to assign a monetary worth to carbon emissions. As corporations are increasingly held responsible for their environmental impact, the carbon market has become a pivotal tool in encouraging sustainable practices and driving emissions reductions.

The influence of carbon markets on corporate actions is multifaceted, spanning both operational and strategic dimensions. Operationally, the imposition of a carbon price encourages companies to internalize the previously externalized costs of pollution, motivating them to invest in cleaner technologies and adopt energy-efficient practices to mitigate financial liabilities. Strategically, participation in carbon markets can enhance a corporation's reputation by signaling its dedication to environmental stewardship, attracting environmentally conscious investors, and bolstering brand image. Furthermore, carbon markets incentivize innovation by rewarding companies that innovate and implement low-carbon technologies, fostering a competitive landscape that stimulates green economic growth.

However, the effectiveness of carbon markets in shaping corporate behavior hinges on several factors, including the stringency of emissions reduction targets, the stability of pricing mechanisms, and the enforcement of regulatory frameworks. While carbon markets have undeniably influenced corporate actions towards sustainability, their long-term impact is contingent upon the continuous refinement and expansion of these markets, alongside the establishment of robust global agreements that align corporate interests with the imperative of climate change mitigation. In this context, the ongoing evolution and maturation of carbon markets offer a compelling avenue for academia, policymakers, and businesses to collaboratively explore their potential in driving meaningful environmental change through corporate action [3].

The United States initiated voluntary participation in the greenhouse gas emissions reduction market, setting the precedent for such participation. With China's rapid industrialization, emissions of industrial gases, including carbon dioxide, have witnessed a dramatic upsurge. Since 2005, China has consistently been the largest global CO₂ emitter, contributing over a quarter of total global

emissions by 2019. The inevitability of China's carbon market development became apparent in 2007 when a national carbon market was established under the guidance of the State Council's Premier. At the national institutional level, an overseeing body led by the State Council's Premier was established to address energy conservation, emissions reduction, and climate change response. In 2008, the National Development and Reform Commission (NDRC) formed the Department of Climate Change Response, actively engaging in climate change mitigation efforts. At the local institutional level, all provinces and municipalities established their dedicated climate response departments to oversee emission reduction and environmental protection activities within their respective jurisdictions. In 2011, the launch of local pilot phases marked the official commencement of carbon market development, progressing from 2011 to 2013. Subsequently, in June 2013, Shenzhen inaugurated China's first carbon emissions trading pilot market, followed by the establishment of seven more pilot carbon markets in Beijing, Shanghai, Tianjin, Chongqing, Hubei, and Guangdong. Fujian joined as the eighth pilot carbon market in China. The second phase involved the preparation of a unified national carbon market spanning from 2014 to 2019. A significant milestone was reached in 2014 with the release of the National Development and Reform Commission's (NDRC) Interim Measures for the Administration of Carbon Emission Trading, which outlined the foundational structure of a unified national carbon market at the national level.

China aims to officially launch its national carbon market in 2017. was jointly issued by the United States and China in 2015.

In December 2017, the National Carbon Emissions Trading Market Construction Program (Power Generation Sector) was released.

The release of the National Carbon Emissions Trading Market Construction Program (Power Generation Sector) in December 2017 marked the establishment of the national carbon trading market, and in 2018, the main tasks of the carbon market construction will be to concretize the technical operations such as data submission and registration.

After a series of inspections and evaluations, Hubei and Shanghai became China's carbon trading.

The third stage is the gradual development and maturity of the national unified carbon market (2020 to present). 2020 is the year when the construction of the national carbon market enters the stage of deepening and perfecting. After nearly three years of preparation and simulation operation, the unified national carbon market for the power industry was officially launched in July 2021, and in addition to the power generation industry, it will gradually cover key industries such as steel, petrochemicals, chemicals, aviation, and other key industries with large emissions. 2021, China's carbon emission right registration system started to provide 2,225 carbon emission rights to 2,650 households.

In 2021, China's carbon emission rights registration system started to handle account opening procedures for 2,225 compliance enterprises. After

In 2021, China's carbon emission rights registration system began to process account opening procedures for 2,225 compliant enterprises. After comprehensive docking and coordination, the national carbon market will be officially opened by the end of June 2021.

The national carbon trading market will be opened by the end of June 2021, after full coordination and harmonization [4].

3. Analysis of the Influence of the Emergence of Trading Market On the behavior of enterprises

The emergence of carbon trading markets represents a pivotal moment in the global effort to combat climate change. As nations and industries grapple with the pressing need to reduce greenhouse gas emissions, these markets have gained prominence as a means of incentivizing and regulating corporate behavior. In this essay, we will delve into the profound effects that carbon trading markets

have on various facets of corporate conduct, including production, innovation, social responsibility, goals, and future development direction.

One of the most tangible impacts of carbon trading markets on corporate behavior is a significant shift in production and operational practices. As businesses participate in these markets, they are compelled to reevaluate their carbon footprint. This often results in a concerted effort to reduce emissions through more energy-efficient production processes and environmentally conscious operations. The drive to cut emissions not only aligns with sustainability goals but also reduces operational costs, making it a win-win strategy.

Innovation is at the heart of any response to climate change, and carbon trading markets play a pivotal role in catalyzing it. Corporations engaged in these markets are motivated to invest in research and development aimed at creating cleaner technologies and more sustainable practices. This innovation can span from improving energy efficiency within existing processes to developing groundbreaking solutions in renewable energy, waste reduction, and carbon capture technologies.

Corporate social responsibility (CSR) has evolved from being a buzzword to an integral aspect of a company's identity. Participation in carbon trading markets is often seen as a demonstration of a company's commitment to sustainability and environmental stewardship. It can significantly enhance a company's reputation and serve as a powerful marketing tool, resonating with consumers who increasingly prioritize eco-conscious brands.

Carbon trading markets necessitate the establishment of precise carbon reduction targets. In response, companies set ambitious sustainability goals and strive to meet these objectives. The clear metrics provided by these markets enable companies to track their progress accurately and make data-driven decisions to achieve emission reductions efficiently. This not only aids in regulatory compliance but also fosters a culture of accountability and environmental consciousness within the organization.

The impact of carbon trading markets extends to shaping a company's future development direction. Companies, faced with the necessity of reducing emissions, may pivot towards low-carbon business models. This transition could involve diversification into renewable energy, green technologies, or the production of sustainable products and services. The carbon trading landscape thus serves as a guiding force in corporate strategic planning.

Carbon trading markets have financial implications for companies. Beyond the obvious cost savings associated with emission reductions, some businesses can generate revenue by selling carbon credits when they surpass their reduction targets. Furthermore, carbon prices in these markets can directly affect a company's financial performance, introducing a new variable that must be considered in risk assessments and financial planning.

Participation in carbon trading markets can facilitate international expansion for corporations. By demonstrating a commitment to global sustainability goals, companies may find it easier to enter new markets that prioritize environmental responsibility. Additionally, access to markets with carbon pricing mechanisms can significantly influence corporate decisions regarding expansion and investment.

4. The Impact of Carbon Markets

Carbon markets are designed to put a price on carbon emissions, encouraging corporations to reduce their carbon footprint and transition to cleaner, more sustainable practices. As of 2020, the global carbon market was valued at around \$215 billion. Carbon markets operate on the principle of cap-and-trade or carbon pricing, where companies are allocated a certain amount of carbon allowances or credits. In the European Union's Emissions Trading System (EU ETS), for example, the cap set for 2020 was approximately 1.8 billion tons of CO₂ equivalent. Companies can buy or sell these allowances in a market, and those who emit less than their quota can sell their excess allowances. For

instance, in 2019, the price of carbon in the EU ETS fluctuated between €20 to €30 per ton of CO₂. Energy-intensive industries such as power generation, steel production, and cement manufacturing face significant challenges in reducing carbon emissions. These sectors, responsible for nearly 20% of global CO₂ emissions, have felt the financial impact of carbon markets the most. Companies in these sectors sometimes must purchase carbon allowances, leading to higher operational costs. For example, a steel company producing 10 million tons of steel could have emissions costs of around €200 million to €300 million annually at the prices. On the flip side, the renewable energy sector, including wind, solar, and hydroelectric power, has experienced substantial growth, with global renewable capacity increasing by 200 GW in 2019. These industries benefit from carbon markets by generating carbon credits through clean energy production. Companies in this sector can sell these credits to carbon-intensive industries, creating a favorable business environment that saw investments in renewables reach \$282.2 billion in 2019. Technology and service-based industries, which contribute roughly 10% of global emissions, have a different relationship with carbon markets. Although they have lower direct emissions, their role in reducing carbon in other sectors is vital. Financially, participation in carbon emission trading may increase liabilities. A company emitting 1 million tons of CO₂ over its allocation, at a rate of €25 per ton, would incur an additional liability of €25 million. This can influence the company's asset-liability ratio. However, investments in sustainability can offset these costs. A power company investing €1 billion in renewable infrastructure, for example, would see a substantial increase in its total assets.

5. Data Analysis

Carbon markets have emerged as a pivotal mechanism in the global effort to combat climate change by providing a tangible way to monetize carbon emissions. This innovative approach introduces a powerful economic incentive for enterprises to actively reduce their carbon output and transition towards more sustainable practices. These markets primarily function through two key strategies: the cap-and-trade framework and carbon pricing strategies, both of which play a crucial role in shaping the behavior of participating entities.

Under the cap-and-trade framework, enterprises are allocated specific carbon allowances, which essentially represent a cap on their permissible carbon emissions. This allocation is typically based on historical emissions data or other relevant criteria. Companies that can reduce their emissions below the allocated threshold can sell their surplus allowances, thereby generating revenue. Conversely, those that exceed their allowances must purchase additional allowances, incurring financial penalties. This fundamental economic structure provides a powerful motivation for businesses to find innovative ways to reduce their carbon emissions.

The implications of the carbon market system are profound and multifaceted, and they vary across different industrial sectors. Energy-intensive sectors such as power generation, steel manufacturing, and cement production face particularly significant challenges in achieving substantial emission reductions. However, the presence of carbon markets goes beyond mere incentive; it acts as a critical catalyst for change within these sectors.

For industries with high emissions profiles, carbon markets serve as a driving force that compels them to adopt cleaner technological innovations and enhance energy efficiency measures. Failing to adapt to these new standards could result in financial consequences, including the costs associated with purchasing additional carbon allowances. These economic pressures, stemming from participation in carbon markets, effectively act as a fulcrum for technological innovation and a paradigm shift towards environmentally friendly practices.

In essence, carbon markets play a pivotal role in not only incentivizing emissions reduction but also in shaping the trajectory of entire industries towards more sustainable and eco-friendly methodologies. The economic dynamics of these markets provide a powerful impetus for companies

to invest in research and development, explore cleaner energy sources, and implement more efficient processes, ultimately contributing to a greener, more sustainable future for our planet.

Conversely, sectors entrenched in renewable energy generation, encompassing wind, solar, and hydroelectric modalities, stand to gain substantially. Such sectors, by virtue of their clean energy production, are positioned to accrue carbon credits, which can subsequently be commercialized to entities with higher emission trajectories. This not only diversifies their revenue generation but also fortifies the economic rationale for amplified investments in renewable energy infrastructural development [5].

In the realm of technology and service-oriented industries, where inherent carbon emissions are comparatively diminutive, the advent of carbon markets furnishes a unique proposition. It bestows upon them a vanguard role in research and development initiatives, propelling them to ideate and manifest advanced solutions that facilitate emission curtailment across various sectors.

From a fiscal perspective, engagement in carbon emission trading presents a nuanced scenario for enterprises. On one hand, it could augment a firm's liabilities, primarily attributed to the financial outlays necessitated by the procurement of allowances or credits. Concurrently, it catalyzes the impetus for investments in sustainable infrastructure and technological innovations, potentially amplifying the asset base of the firm. Over an extended temporal frame, although the incipient phases of carbon trading engagement may exert fiscal pressures, the overarching benefits—characterized by sustainable operational paradigms and attenuated carbon-associated risks—may bolster a firm's market stature and valuation.

6. Conclusion

Carbon trading markets have emerged as a transformative mechanism in the global fight against climate change. These markets provide companies with a tangible means to monetize carbon emissions, thereby introducing a powerful economic incentive to actively reduce carbon output and transition toward sustainable practices. The primary strategies within these markets are the cap-and-trade framework and carbon pricing strategies, both of which profoundly influence the behavior of participating entities.

From a fiscal perspective, engaging in carbon emission trading presents a nuanced scenario for companies. On one hand, it may increase liabilities due to financial outlays required for the procurement of allowances or credits. Simultaneously, it catalyzes investments in sustainable infrastructure and technological innovations, potentially amplifying a company's asset base. Over an extended temporal frame, while the initial phases of carbon trading engagement may exert fiscal pressures, the overarching benefits—characterized by sustainable operational paradigms and reduced carbon-associated risks—may bolster a company's market stature and valuation.

In conclusion, carbon trading markets play a pivotal role in reshaping how companies approach emissions reduction and sustainability. They incentivize innovation, guide industries toward eco-friendly practices, and contribute to a sustainable future. While initial fiscal challenges may arise, the long-term advantages encompass sustainability, operational efficiency, and enhanced competitiveness in a world increasingly focused on environmental responsibility. Carbon markets, with their economic drivers, are integral to the transition toward a more sustainable and greener planet.

Author Contribution

All the authors contributed equally, and their names were listed in alphabetical order.

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The Effects of Information Asymmetry on Audit Fees

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Abstract: Audit fees refer to the financial compensation received by accounting firms and auditors in return for the delivery of their professional services. These services encompass a range of operations, including the analysis of financial statements, evaluation of internal controls, and performance of numerous other tasks linked to auditing. Typically, organizations remunerate external audit firms for their services through fees, which can be either annual or based on the specific services rendered. The remuneration for audit services is commonly subject to variability, with adjustments made based on the particular audit engagement's scope and complexity. This paper delves into the correlation between information asymmetry and audit fees. The concept of information asymmetry arises when there is an unequal distribution of information between two parties involved in a transaction, leading to an imbalance in knowledge. This phenomenon has a notable influence on the determination of audit fees. This paper examines the theoretical underpinnings, empirical findings, and practical ramifications of the impact of information asymmetry on audit costs and the quality of audit services. The work analyzes the elements that contribute to information asymmetry by conducting a comprehensive review of current literature and empirical studies. Through this analysis, the study sheds light on the complex dynamics between information asymmetry, audit fees, and audit quality.

Keywords: Audit Fees, Information Asymmetry, BAS

1. Introduction

Financial statements play a crucial role in facilitating communication between firms and their investors. The supply of precise financial reports is of utmost importance in guaranteeing the efficiency and credibility of a corporation. The book "Financial Accounting" highlights the considerable importance of financial statements for both internal and external stakeholders. The establishment and sustenance of investor confidence is significantly contingent upon the caliber of these financial reports (3-10) [1]. Given the aforementioned assertion, the necessity for external auditing emerges as a crucial component in ensuring the integrity of financial accounts. However, the matter of establishing an equitable and logical audit charge has emerged as a complex subject of discourse.

The presence of information asymmetry is a prevalent concern within the realm of financial markets and organizations. The quantification of information asymmetry has garnered the interest of economists, as it is seen as a means to address trust issues and foster an improved corporate climate.

Within the realm of audit services, the concept of information asymmetry pertains to the disparities in knowledge and information accessibility that exist between auditors and their clients. This discrepancy frequently results in heightened levels of audit risk. Audit fees, which refer to the remuneration provided by clients to external audit companies, are subject to the effect of multiple factors, with knowledge asymmetry being a crucial determinant. The objective of this paper is to offer a comprehensive analysis of the impact of information asymmetry on the price of audit services. This will be achieved through an examination of various empirical research and theoretical frameworks.

Upon reviewing Dr. Richardson's material, it becomes evident that certain firms frequently engage in the practice of presenting financial statements that lack transparency, with the intention of concealing information from both auditors and the general public [2]. As a result, auditors encounter difficulties when providing informed assessments regarding the dependability of these companies' reports. The study conducted by Alex Frino offers a valuable quantitative methodology for assessing and quantifying information asymmetry. This statement presents two well-established indicators of information asymmetry, namely the bid-ask spread (BAS) and the probability of informed trading (PIN). The study's empirical findings provide evidence of a positive relationship between knowledge asymmetry and audit fees [3].

The paper conducted an in-depth examination of pertinent research articles pertaining to the concept of information asymmetry and its relationship with audit fees. The main aim of this study was to acquire a more comprehensive understanding of quantitative indicators of information asymmetry and approaches to mitigate its impact, with the ultimate objective of enhancing the overall business and investment climate.

2. Factors Causing Information Asymmetry

To begin with, numerous studies have underscored the importance of financial reporting in influencing the level of information asymmetry. The scholarly article titled "The Impact of Financial Statements Quality on Information Asymmetry and Investment Efficiency: A Moderating Variable Analysis in the Mining Industry" explores the theoretical framework of Agency Theory. This theory investigates the dynamics between a principal and an agent, emphasizing the inherent conflict of interests that arises when both parties strive to maximize their individual gains. In instances of this nature, the agent may deviate from the principal's initial intentions in order to pursue their own personal advantages. In the present scenario, the occurrence of information asymmetry becomes evident [4]. Within a corporate context, the concept of information asymmetry refers to a situation when the financial statements of a company fail to accurately depict the true operational condition of the organization. As a result, this can have detrimental effects on decision-making processes related to future investments. When internal reports contain mistakes, it results in a loss of trust from investors and the public. The Agency Theory can be more readily comprehended when viewed through the lens of moral considerations. Farid Sumantri provides a comprehensive explanation of the idea known as "Moral Hazard," which pertains to the phenomenon where managers and other individuals with insider knowledge has a greater understanding of a company's problems and prospects compared to external parties. Furthermore, it is possible that there exist certain pieces of information that have not been presented to the principal [5]. The presence of external auditors plays a vital role in rectifying these mistakes. Nevertheless, it can be argued that companies that possess intricate financial statements and lack transparent disclosures are more likely to have information asymmetry. Consequently, these organizations may require more comprehensive audit services, resulting in higher associated costs.

Moreover, when dealing with larger and more intricate organizational entities, auditors may encounter difficulties in terms of accessing and comprehending the substantial amount of information available. An expansion in corporate size is accompanied by a corresponding rise in staff count, which

consequently raises the probability of ethical issues arising. The efficacy of internal control systems may be compromised, particularly in situations where a significant number of knowledgeable personnel work inside a single department. Despite the high level of trustworthiness exhibited by workers within a huge corporation, the information emanating from such an organization can significantly augment the workload of auditors. As a result, this frequently results in increased audit fees for clients with these characteristics. However, it is crucial to acknowledge that information asymmetry extends beyond instances where auditors deliberately receive inaccurate information. Furthermore, it is worth noting that it can also be construed as supplementary labor, so exemplifying an additional facet of information asymmetry.

3. Relationship Between Information Asymmetry and Audit Fees

To comprehensively examine the impact of information asymmetry on audit fees, it is important to go into specific aspects. The presence of information asymmetry results in an elevation of the inherent audit risk, prompting auditors to spend additional efforts in order to mitigate this risk. The increased perception of audit risk serves as a significant determinant for elevated audit fees. According to Greg Clincha, it has been seen that auditors with substantial financial stakes in litigation, commonly referred to as "deep pockets," are more motivated to give accurate findings, resulting in the production of superior outcomes [6]. This statement suggests that auditors bear the responsibility of potential legal action arising from the audits they do. When auditors are confronted with a less transparent report from a sizable corporation, they assume the responsibility and potential repercussions for any mistakes contained within the reports disseminated to the public, irrespective of whether these inaccuracies are primarily derived from the material furnished by the company. On the contrary, auditors have the option to collaborate with corporations in order to generate deceptive audit reports, so misleading investors. Audit risk is influenced by the presence of information asymmetry between the company and the auditor, which arises from both parties. Regardless of the circumstances, auditors are obligated to assume responsibility for this additional risk. The increased level of risk associated with a certain situation always leads to a corresponding increase in compensation, specifically in the form of audit fees.

Moreover, in the presence of information asymmetry, auditors are faced with the necessity of employing supplementary audit processes to safeguard the veracity of the financial statements under scrutiny. The additional procedures often entail a more comprehensive and thorough examination of the data provided by the client organization. The primary objective of this endeavor is to identify any anomalies or inconsistencies that may not be readily evident in the financial records that are already characterized by a higher level of transparency. For instance, the analysis extensively examines the financial data in order to identify any indications of fraudulent behavior or misuse of financial resources. The process encompasses methodologies such as data analytics and pattern recognition in order to detect suspected illicit activity. The implementation of these supplementary audit procedures is characterized by a significant expenditure of time and resources. It is imperative for auditors to allocate more time to the audit procedure. Furthermore, the implementation of these comprehensive procedures frequently necessitates the utilization of specialist equipment and technology, as well as additional human resources, resulting in supplementary expenses. These several elements all add to an increased cost associated with executing the audit.

Consequently, the heightened risk, allocation of efforts, allocation of resources, and allocation of time devoted to mitigating the issues arising from knowledge asymmetry are manifested in the audit costs levied onto the client organization.

4. Quantify Information Asymmetry and Effect on Audit Fees

Numerous empirical studies continuously reveal a positive association between information asymmetry and audit fees, indicating that companies with higher levels of knowledge asymmetry tend to experience higher audit costs. In order to gain a deeper understanding of this correlation, Professor Alex Frino developed the utilization of proxy variables, namely the Bid-Ask Spread (BAS) and the Probability of Informed Trading (PIN) [3]. BAS, widely recognized as a measure of market transparency, functions as a tool for assessing market dynamics. The concept being discussed involves the measurement of the disparity between the maximum price at which a purchaser is willing to acquire a security or asset (known as the bid) and the minimum price at which a seller is willing to sell (known as the ask) [7]. A lower bid-ask spread in a market reflects a decrease in information asymmetry, as it indicates that trade takes place within a relatively limited price range, hence implying a more transparent trading environment. On the other hand, a more extensive dispersion indicates an increased level of information asymmetry. This is due to the fact that a wider spread suggests a broader range of prices in trading, which is generally linked to a market that lacks transparency and involves several uneducated players making varied selections. PIN measures market information asymmetry by estimating the probability that a trade is informed [8]. Information asymmetry affects audit expenses, as shown by the association between market proxies BAS and PIN and audit fees. Information disclosure and transparency, with a narrow BAS and less PIN, sometimes lead to lower audit fees. As information asymmetry increases, audit costs rise in markets with larger BAS and increased PIN. This tendency acknowledges auditing's increased complexity and risks.

The inclusion of BAS and PIN as established proxies in Professor Frino's regression model provides more evidence supporting their validity in assessing information asymmetry and its influence on audit fees. The findings are consistent with anticipated outcomes, illustrating a favorable and direct relationship between knowledge asymmetry and audit fees. This empirical evidence substantiates the proposition that greater information asymmetry is associated with heightened audit expenses. This highlights the pragmatic and dependable nature of employing these proxies to objectively evaluate the financial ramifications of knowledge asymmetry within the framework of audit fees.

The equation presented below represents the linear regression model employed by Professor Frino in order to compute the correlation between information asymmetry and audit fees. The regression model facilitates the examination of the impact of different factors on audit fees and the comprehension of their statistical associations by researchers. The coefficients associated with each variable in the model offer insights into their respective effects on audit fees.

$$Afee_{i,t} = \alpha_0 + \alpha_1 Asymmetry_{i,t} + \alpha_2 Debt3_{i,t} + \alpha_3 Rating_{i,t} + \alpha_4 Size_{i,t} + \alpha_5 Growth_{i,t} + \alpha_6 Leverage_{i,t} + \alpha_7 Current_{i,t} + \alpha_8 Quick_{i,t} + \alpha_9 YE_{i,t} + \alpha_{10} Segment_{i,t} + \alpha_{11} Foreign_{i,t} + \alpha_{12} ROA_{i,t} + \alpha_{13} Big4_{i,t} + \alpha_{14} CloseShare_{i,t} + \alpha_{15} Debtq_{i,t} + \alpha_{16} Icweak_{i,t} + \alpha_{17} Specialist_{i,t} + \alpha Year\ Effects + \alpha Industry\ Effects + \varepsilon_{i,t} \quad (1)$$

Applying data from over 200 firms to the regression model (1) yielded results that align with the expected outcomes. The result is shown in table 1. Notably, when the bid-ask spread (BAS) increases by 1%, audit fees exhibit a significant 6 percent increase. This revealed the positive correlation between information asymmetry and audit fees. Moreover, the positive correlation between audit fees and company size from this table confirms the concept mentioned in the beginning of this article, said that larger companies tend to incur higher audit costs.

An intriguing note in the findings is the presence of a negative link between debt and audit fees. The observed inverse correlation indicates that there is a tendency for audit fees to decrease as a

company's amount of debt grows. The seeming paradoxical correlation can be elucidated by the influence of debt as a mechanism for external oversight or regulatory supervision. Debt entails the involvement of supplementary stakeholders that possess a vested interest in monitoring the fiscal well-being of the organization. The heightened level of external monitoring has the potential to enhance information transparency, hence diminishing the necessity for comprehensive audit services and consequently resulting in reduced audit prices.

To summarize, the empirical results obtained from examining data from more than 200 firms shed light on several key observations. Firstly, they underscore the substantial influence of information asymmetry on audit fees. Secondly, they establish a positive association between audit fees and company size. Lastly, they suggest that debt may have advantageous effects in promoting information transparency, thereby potentially leading to a decrease in audit fees. The findings of this study offer significant contributions to the understanding of the financial consequences associated with information asymmetry and audit expenses.

Table 1: Regression results: audit fees and information asymmetry [3]

Variable	Exp. Sign	Panel A: BAS			Panel B: PIN		
		Dep. Var.: Afee			Dep. Var.: Afee		
		Coeff.	p-Value	Sign.	Coeff.	p-Value	Sign.
Intercept	+	-3.5154	0.000	1%	-3.3524	0.000	1%
BAS	+	0.0635	0.027	5%			
PIN	+				0.1263	0.070	10%
Debt3	-	-0.2603	0.000	1%	-0.3293	0.000	1%
Rating	-	-0.0195	0.000	1%	-0.0169	0.008	1%
Size	+	0.5848	0.000	1%	0.5904	0.000	1%
Growth	-	-0.0004	0.637		-0.0006	0.557	
Leverage	+	0.4976	0.010	1%	0.7238	0.002	1%
Current	+	0.9516	0.000	1%	0.8897	0.000	1%
Quick	-	-0.1699	0.000	1%	-0.1535	0.000	1%
YE	-	0.0284	0.301		0.0549	0.086	10%
Segment	+	0.1274	0.000	1%	0.1294	0.000	1%
Foreign	+	0.1048	0.000	1%	0.1058	0.000	1%
ROA	-	-0.0734	0.718		-0.2418	0.296	
Big4	+	0.0829	0.000	1%	0.0933	0.001	1%
CloseShare	-	0	0.998		0.0000	0.060	10%
Debtq	+	-0.0003	0.433		-0.005	0.538	
Icweak	+	0.2409	0.038	5%	0.2963	0.024	5%
Specialist	+	0.1136	0.000	1%	0.1052	0.000	1%
Year Indicators		Included			Included		
Industry Indicators		Included			Included		
Adj R ²		0.8			0.81		
F-Stat		86.52			69.65		
N		1481			1114		

To validate the model's accuracy, Professor Frino and his research team conducted robustness tests. Table 2 presents the findings of a particular examination, which luckily indicate few faults or variances. This result enhances the dependability of the model and indicates that its conclusions are resilient and uniform across many circumstances or modifications. This finding enhances the level of

confidence in the model's capacity to effectively capture the correlation between the variables and audit fees.

Table 2: Robustness Test [3]

Variable	Exp. Sign	Panel A: BAS			Panel B: PIN		
		Dep. Var.: Afee			Dep. Var.: Afee		
		Coeff.	p-Value	Sign.	Coeff.	p-Value	Sign.
Intercept	+	-1.4445	0.067	10%	-1.3939	0.059	10%
BAS	+	0.0953	0.022	5%			
PIN	+				0.0972	0.063	10%
Debt3	-	-0.4648	0.083	10%	-0.4978	0.054	10%
Rating	-	-0.0014	0.008	1%	-0.0045	0.005	1%
Size	+	0.5702	0.000	1%	0.5679	0.000	1%
Growth	-	-0.0033	0.258		-0.0036	0.283	
Leverage	+	0.3582	0.013	1%	0.3153	0.019	1%
Current	+	0.4460	0.010	1%	0.4884	0.009	1%
Quick	-	-0.1302	0.015	1%	-0.1263	0.008	1%
YE	-	-0.2111	0.010	1%	-0.2195	0.001	1%
Segment	+	0.2418	0.000	1%	0.2428	0.000	1%
Foreign	+	0.2187	0.000	1%	0.2156	0.000	1%
ROA	-	-0.0936	0.315		-0.1057	0.299	
Big4	+	0.0971	0.001	1%	0.1274	0.002	1%
CloseShare	-	0.0003	0.586		0.0003	0.452	
Debtq	+	-0.0009	0.779		-0.0020	0.600	
Icweak	+	0.3943	0.022	5%	0.3603	0.021	5%
Specialist	+	0.0541	0.021	5%	0.0608	0.033	5%
Adj R ²		0.60			0.60		
F-Stat		66.89			77.11		
N		1481			1114		

In essence, Professor Frino's study effectively establishes a robust correlation between knowledge asymmetry and audit fees. Consequently, this study posits that organizations can employ this understanding to potentially reduce forthcoming operating expenses. Audit fees commonly represent a substantial proportion of corporations' administrative expenditures. By implementing efficient internal controls in their daily operations, organizations have the ability to achieve cost reduction while also significantly improving their market credibility. Furthermore, the research indicates that there is a possibility of deliberate manipulation of information asymmetry by specific organizations in order to obtain competitive advantages. This highlights the significance of mitigating such conduct through the implementation of regulatory measures. It is worth noting that the existence of debt has the capacity to alleviate information asymmetry, suggesting that the implementation of more stringent regulatory measures, with the exception of auditing, may have the ability to decrease information asymmetry. Furthermore, the utilization of the research findings can serve as a means for auditing organizations to optimize their operational efficiency. The provided information can be employed to evaluate the risk associated with organizations and allocate suitable personnel for the execution of audit services.

5. Conclusion

The primary focus of this paper pertained to the concept of information asymmetry and its correlation with audit fees. This observation underscores the notion that variables such as the accuracy and reliability of financial statements, the magnitude of a company's operations, and the extent of its transparency can all play a role in the presence of information asymmetry. The article substantiated the existence of a positive association between audit fees and information asymmetry by an extensive examination of relevant scholarly works. Nevertheless, the article acknowledges its inherent constraints. The method employed in this study is predominantly centered around a comprehensive analysis of current literature, so ensuring that the information and conclusions drawn are firmly grounded in established research and empirical evidence. In order to enhance the currency and comprehensiveness of findings, forthcoming research endeavors may get advantages from conducting empirical investigations utilizing authentic, real-world datasets. Engaging in novel research endeavors would facilitate the acquisition of current and comprehensive data. The crucial importance of accounting in fostering trust within the economy cannot be overstated. It is crucial to acknowledge the association between information asymmetry and audit fees. Transparency measures can be implemented by companies in order to improve market efficiency and reduce audit expenses. In order to bridge the divide between firms and investors, auditors are required to uphold a high standard of honesty. In summary, the establishment of collaborative efforts between corporations and auditors serves to enhance transparency, mitigate information asymmetry, and foster economic trust.

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Mergers and Acquisition in the Fashion Industry

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Abstract: On August 10th, 2023, Tapestry Inc., the parent company of renowned fashion brand Coach, announced a definitive agreement to acquire Capri Holdings Limited, which owns the iconic brands Michael Kors, Versace, and Jimmy Choo. This move signals the company's aspirations to establish a powerful global portfolio of iconic luxury brands, one that would rival European conglomerates LVMH, Richemont, and Kering. Merger and Acquisition is a strategic tool utilized by organizations worldwide to adapt to the demands of today's dynamic business environment. This strategy has gained significant attention and prominence in the fashion industry. Therefore, this study employs profitability metrics, liquidity metrics, and credit metrics to assess the post-merger financial performance of a select group of fashion companies, thereby gauging the effectiveness of the M&A tool. Results of this study show that there are no significant improvements in financial performance following the merger and acquisition.

Keywords: Fashion Industry, merger and acquisition, financial performance, profitability

1. Introduction

In the 1980s, the European luxury and fashion industry underwent an organizational transformation shifting from small & medium-sized family businesses to large groups, seeking centralized control over financial resources, distribution systems, and a diverse brand portfolio [1]. Today, the three conglomerates hold a dominant position in the luxury industry. Consequently, the three luxury houses' business practices such as strategies and organizational structures have been models for smaller companies in the fashion industry to emulate and apply [2].

The announcement by Tapestry Inc. regarding the agreement with Capri Holdings Limited that it would acquire Capri Holdings Limited to establish a powerful global house of fashion brands grabbed my attention to this particular topic. In recent years, the leading luxury retailer Coach has adopted several strategies to rebuild its brand image, including reducing coupons and discounts. It also acquired Kate Spade and Stuart Weitzman, and then it changed its name to Tapestry, reflecting that many brands sit under its umbrella. For Tapestry Inc., this acquisition is another strategic move towards establishing a larger global luxury house that would compete in the fashion industry. Research has shown that the fashion industry is one of the least impacted areas in times of economic recessions [3]. According to Bain & Company, following a sharp contraction in 2020, the global luxury market has rebounded and surpassed its pre-pandemic sales levels in 2021 and 2022. LVMH, the world's largest luxury group reported robust sales growth in fiscal years 2021 and 2022 despite the impact of Covid-19 lockdown policies in China and economic volatility resulting from the war in

Ukraine. Despite the market volume and growth potential, the fashion industry is characterized by its highly cyclical nature and serious idiosyncratic risk [4]. Previous research mainly focused on identifying key value drivers in fashion M&A deals, but few analyzed the operating performance after M&A.

The objective of this paper is to analyze the post-merger financial performance of a select group of fashion companies and to assess the efficiency of the M&A tool. My approach in this paper is to use post-merger accounting data to test for changes in operating performance.

2. Literature review

A significant number of mergers and acquisitions (M&A) transactions have occurred since the turn of the 20th century, substantially restructuring industries across various regions of the world [5]. Since the early 1990s, a growing proportion of M&A transactions have adopted the cross-border acquisition format [5]. In the industrialized countries, a total of 19,996 M&A transactions worth \$1390 billion took place between 1990 and 1995, followed by 34,147 M&A transactions valued at \$8135 billion between 1996 and 2001[6]. According to the Institute for Mergers, Acquisitions, and Alliances, more than 790,000 M&A transactions have been announced worldwide with a known value of over \$57 trillion.

M&As are a useful tool to improve both acquirers' and target companies' competencies, organizations, and performance [5]. Previous studies have examined how target companies benefit from the directions and interventions of the acquirers, and how the value of involving firms might be enhanced. In Goold et al. [6] paper, researchers proposed parenting advantage, which is parent companies create value for the subsidiaries and influence the decisions and strategies of the subsidiaries. For acquirers, M&As are channels through which can improve efficiency and create value. M&As are processes that exploit economies of scale and scope, optimize capacity utilization, and realize synergy. Other motivations for M&As are to lower transaction costs through the acquisition of cost-saving technologies and spread fixed costs over a larger base. Furthermore, M&As might bolster product market power by allowing merging parties to cross-sell products to a broader customer base [5-8].

Few researches concentrated on M&A transactions in the luxury industry. In the paper by Meinshausen & Schiereck[4], 192 bidder transactions at a total value of \$25,480 million were selected to analyze the value implications of M&As in the fashion industry and to determine the market dynamics of this particular sector. The criteria applied by Meinshausen & Schiereck[4] are the following: 1) both acquires and targets operate in the fashion and accessories industry; 2) the bidders are publicly listed and the trading data pre- and post-acquisition is available; 3) the transactions are finalized; 4) the transactions endow the acquirer more than 50% of voting rights. In Meinshausen & Schiereck's [4] research paper, they find that positive abnormal returns are distributed to acquiring shareholders. Contrary to the expectations, they further reveal that large companies as frequent acquirers do not witness significant shareholder wealth increases. In Kapferer & Tabatoni's [9] research paper, they analyze the LVMH–Bulgari deal which was announced in 2011 from interrelated marketing and financial–strategic perspectives and reveal why the family-owned companies would abandon their persistent “family-owned” policy and merge with luxury powerhouse. For the previous family-owned companies such as Bulgari, the first reason for them to sell up is the dilemma of the transmission of their companies. As their heirs/heiresses are not willing to manage the companies, and other family members who hold shares may have friction with talents hired outside. The second reason is the leadership and undercapitalized financial problems to accelerate expansions. This is a win-win opportunity. For LVMH, its watches and jewelry division had a weak performance and it seek to close the gap with Cartier and Tiffany (who was acquired by LVMH in 2021). The family-owned business gains cash as well as the skills in brand development, expertise, synergies, talents,

and institutional support. Kapferer& Tabatoni[9] further stated that only the most successful powerhouses such as LVMH, Kering, Richemont, etc. can generate enough cash flow to finance their massive investments while others may have more difficulties.

Findings from previous research conclude that M&As do impact firms, but they do not give a definite conclusion on whether M&As would increase a firm's financial performance.

3. Methods

According to Giacosa's [10] book, the following are the main types of acquisition in the luxury industry:

Table 1: Typologies of Acquisitions

Types	Definitions	Examples
Vertical acquisitions	The acquiring companies acquire one of its suppliers or key customers	LVMH purchased Les Tanneries Roux, a supplier that manufactures high-quality leather
Horizontal acquisitions	The acquiring companies and the target companies operate in the same business sectors and manufacture the same/similar products	In 2006, Prade acquired 100% of Church
Concentric acquisitions	The line of products manufactured by target companies is in the same category as the acquiring companies, and the technologies in the supply chain are similar	LVMH acquired Fendi, Emilio Pucci and Acqua di Parma. PPR acquired Brioni, Gucci and Bottega Veneta
Conglomerate acquisitions	The acquiring companies and the target companies were not related, and they formed by combining different business units.	Richemont, whose core business is jewelry and watches purchased the American clothing brand, Peter Millar.

Followed by the methods used in the article of Abbas et al [11], accounting and financial methods are employed in this study. The following indicators are used to analyze acquisition activities.

Table 2: Indicators used to analyze acquisition activities

Variable	Indicators
Profitability & Efficiency	Return on Equity (ROE) = Net profit after tax / Total equity
	Return on Assets (ROA) = Net profit after tax / Total Assets
	Net Margin = Net Income / Total Revenue
	Earnings Per Share (EPS) = Net profit after tax / No. of ordinary shares
	Interest expense to Interest Income = Interest expense / Interest Income
Liquidity	Total Liabilities to total assets = Total Liabilities / Total assets
Leverage	Debt to Equity Ratio = Total Debt / Total Equity
	Capital Ratio = Total Equity / Total Assets

4. Case Study – Richemont

The core business of Richemont Group is jewelry and watches. The main businesses are divided into 3 parts: jewelry maisons – currently consisting of Cartier, Van Cleef & Arpels, and Buccellati, specialist watchmakers – such as IWC, Piaget, and Jaeger-LeCoultre, and other brands formed by fashion and accessories brands.

From 2013, Richemont did not involve as many horizontal acquisition activities as LVMH and Kering. It maintains its three divisions in a steady state, with only a few brands being sold and acquired. In 2017, it sold Shanghai Tang, a Chinese chic brand. In 2018, it sold Lancel, a French luxury leather goods company. Richemont acquired full ownership of YOOX NET-A-PORTER GROUP (YNAP), the world's leading online luxury and fashion retailer in the same year. In 2019, Richemont extended its fine jewelry expertise by acquiring Buccellati. In 2021, Richemont acquired Delvaux, a renowned luxury leather goods company. In 2022, Richemont announced an agreement with FARFETCH and Alabbar to turn YNAP into a neutral industry-wide platform, thus giving up YNAP's controlling stake.

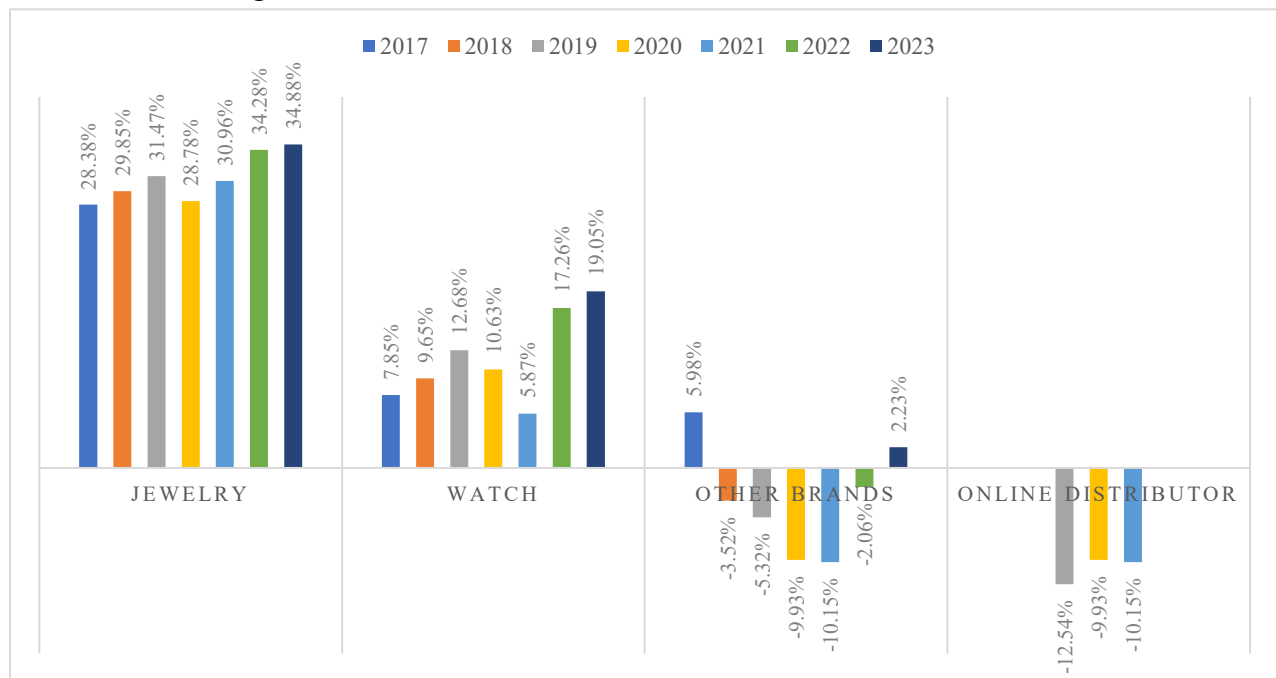


Figure1: Richemont operating margin [12].

In Table 2, Richemont jewelry and watch divisions maintain a stable high operating margin except for the years under the impact of COVID-19. However, the other brands division which includes fashion and accessories brands witnessed a consistent negative operating margin for years.

Table 3: Richemont Profitability & Efficiency Ratio [13].

Fiscal Year	2017	2018	2019	2020	2021	2022	2023
ROA	6.01	5.34	10.39	3.19	3.95	5.51	0.77
ROE	7.91	8.1	17.63	5.47	7.45	11.04	1.61
Net Margin	11.36	11.12	19.9	6.55	9.9	10.81	1.57
Diluted EPS	2.141	2.158	4.927	1.646	2.296	3.611	0.543
Interest Expense to Interest Income	86.30%	94.20%	154.08%	177.78%	259.04%	212.15%	138.36%

In 2019, the ROA, ROE, net margin, and diluted EPS ratios reached a high peak and decreased in the following year due to the impact of COVID-19. In the flowing year of 2021 and 2022, the performance rebounded to the pre-COVID-19 state. However, in 2023, the ratios dramatically decreased as Richemont discontinued its operations in YNAP. Interest expense to interest income represents the cost efficiency. From 2019, Richemont could not minimize the interest expense and non-interest expense, signing them and failing to enhance cost efficiency.

Table 4: Richemont Liquidity Ratio [12].

	2017	2018	2019	2020	2021	2022	2023
Total Liabilities to total assets	22.97%	42.73%	39.23%	43.34%	49.42%	50.33%	53.48%

In Table 4, from 2018 – 2021, more than 40% of assets were financed by liabilities. The total liabilities/total assets ratios increased to over 50% in 2022 and 2023, which could mean that this ratio has not improved after the acquisition of the online distributor and other fashion brands. Richemont increasingly depends on liabilities to generate assets. In Table 5, Richemont is carrying a relatively low leverage.

Table 5: Richemont Leverage Ratio [12].

	2017	2018	2019	2020	2021	2022	2023
Debt to equity	13.59%	55.77%	63.80%	48.70%	57.42%	55.95%	53.91%
capital ratio	77.03%	57.27%	39.23%	43.34%	49.42%	50.33%	53.48%

Table 6: Comparison with Kering [12].

Fiscal Year	2017	2018	2019	2020	2021	2022
ROA	18.83	41.72	25.57	19.14	30.71	29.37
ROE	30.22	29.59	21.20	25.36	18.63	19.34
Net margin	11.54	27.19	14.53	16.42	18.00	17.76
Debt to equity	0.36	0.32	0.65	0.60	0.49	0.58

Table 7: Comparison with LVMH [12].

Fiscal Year	2017	2018	2019	2020	2021	2022
ROA	8.00	8.90	8.40	4.58	10.29	10.84
ROE	18.57	20.78	20.82	12.71	28.48	27.55
Net margin	12.03	13.57	13.36	10.53	18.74	17.79
Debt to equity	0.24	0.19	0.42	0.66	0.51	0.42

Table 6 & Table 7 are part of the comparison of the ratios with LVMH and Kering. Compared to the two luxury powerhouses, Richemont has a relatively low ROA, ROE, and net margin. At the same time, the equity-debt-to-equity ratio of the three companies does not have much difference.

5. Conclusion

The study analyzes Richemont's operating performance from 2017 to 2022. I find no significant positive enhancement in operating efficiency for Richemont after the mergers and acquisitions. It is hard to predict an ideal post-acquisition size for the company. From the statistics and ratios, Richemont did not achieve huge success after the acquisition of some fashion and accessories brands. It increased its ownership in YNAP, expecting a boost in growth in the digital luxury platform. However, its discontinued operations in YNAP represent its failure in this acquisition. In the luxury and fashion industry, M&As are highly practiced but do not guarantee a prominent operating performance. For other smaller companies in the fashion industry who want to start their global expansion or establish diverse brand portfolios, they may face years of negative cash flow as the profits generated cannot finance the massive investment.

This paper only targets valuing financial performance after the acquisition. M&A deals in the fashion and luxury industry are often used as a means through which companies can achieve or maintain economization. Through mergers and acquisitions, fashion companies can aim to optimize the management of individual brands by sharing various resources such as human resources and knowledge sharing. Further research could exploit how the impact of COVID-19 and the economic recession change fashion companies' strategies regarding M&A deals and what kinds of target companies would fashion industry would be interested in.

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Analysis of Factors That Have Hampered Economic Growth in Italy

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Abstract: Italy's economic growth since 1990 faced domestic challenges, including structural issues, tax evasion, bureaucratic inefficiencies, and political corruption. Externally, as an EU member and participant in global economic forums, Italy's fiscal policy constraints and the need for a comprehensive strategy to foster economic development are evident. This article employs a multifaceted research approach to analyze the economic development of Italy in 1990. First, the documentary analysis includes a comprehensive review of the academic literature of various economists, the historical record of Italy and Europe, and the study of national institutions to understand the economic situation at that time. In addition, quantitative data analysis was conducted using economic indicators such as GDP, unemployment rate, and investment and trade data. These data were statistically analyzed to identify trends and implications for the development of the Italian economy. A combination of literature and data analysis methods were used to comprehensively analyze Italy's economic development since 1990 and to provide an overall understanding of both internal and external factors that influenced its economic development. Finally come out with recommendations for Italy's economic development that will help it to develop effective policies and strategies that will lead to a more sustainable path of economic growth.

Keywords: Structural issues, Corruption, EU Single Market, EMU

1. Introduction

Since the 1990s, the Italian economy has struggled to growth so much characterized by a complex interplay of internal and external factors that have impeded its economic performance. Domestically, Italy has been hampered by structural problems. A complex and inefficient bureaucracy, a corrupt political system, and high public debt have stifled innovation and entrepreneurship. This affects the development of the Italian economy from within. It has weakened the country's competitiveness. Externally, Italy was active in trade cooperation with international organizations, as well as being affected by the EU and the global economy in general. Italy's membership in the Eurozone constrained Italy's monetary policy, limiting Italy's ability to meet its economic challenges. These factors further hindered Italy's economic recovery.

Considering internal factors such as domestic structural problems, corruption and bureaucracy together with external factors such as international trade relations and the EU single market, it is important to identify the root causes of the problems limiting economic development and to develop a comprehensive understanding of the Italian economic landscape. It helps the Italian government to

formulate effective policies and adjust its foreign policy decisions. Thus, the prosperity of the Italian economy will be realized.

The rest of this article is arranged as follows: the second part is on internal factors, the third part is on external factors, and finally is the conclusion.

1.1. Literature review

Free competition was an indispensable driving force for social development and one of the most important economic laws in the development of capitalism [1]. In the natural order, the capital of a progressive society is invested, first, in agriculture, second, in manufactures, and, lastly, in foreign trade [2]. The distinguishing features of a capitalist economy were its inability to provide full employment and the unequal distribution of wealth and income. There was no justification for the "present" level of inequality [3]. All the citizens of a country are required to contribute to the maintenance of the government, in proportion to their respective means, so far as it is possible to do so. The equality or inequality of the so-called tax burdens depends upon whether this principle is respected or disregarded [4]. As a social resource, power is in the hands of a few people, and the scarcity of power and the urgency of the demand for power determine its value. And as the owner of power, government officials, out of their own interest maximization considerations, on the basis of measuring the cost-benefit, the scarce power as a weight to exchange interests with other economic actors, if the perceived benefits of corruption are greater than the cost of corruption, they will implement corrupt behavior [5].

2. Basic Fact Analysis

2.1. General Analysis

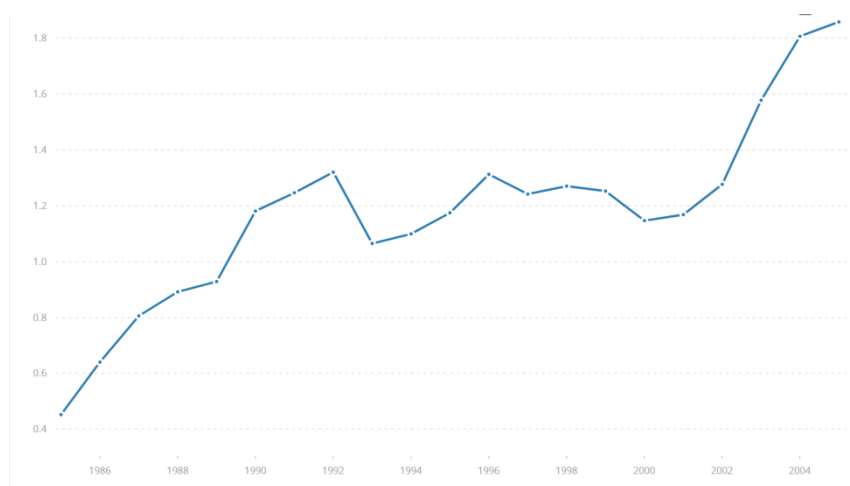


Figure 1: GDP (current US\$) of Italy.

Figure 1 shows the GDP of Italy from 1984 to 2004. As we can see, though the overall GDP is on an upward trend, since 1990, GDP of Italy has been witnessed a fluctuating trend in the following decade. It even declined between 1992 and 1994. The overall trend, marked by ups and downs, reflects the complexities of Italy's economic landscape during this pivotal period.

3. Factors

3.1. Internal Factors

Since 1990, domestic factors have had a great impact in the long struggle for economic growth in Italy. This article will look at SMEs, rigid labor market regulations, tax evasion, regional differences between North and South, bureaucracy characterized by red tape and inefficiency, and corrupt multi-party system.

3.1.1. SMEs

SMEs provides nearly 80% of the industrial and service labor force and generates about two-thirds of the value added. They products that are in demand globally, contributing to export promotion and trade balance. And They also have great flexibility and adaptability. They are able to face the changing market fluctuations and react quickly to consumer preferences. But the disadvantages of SMEs are, their availability of banking credit is low. So it's difficult to access to capital and financing. And It also faces the international competition. It has limited digital skillset compared to EU peers.

3.1.2. Labour Market Rigidity

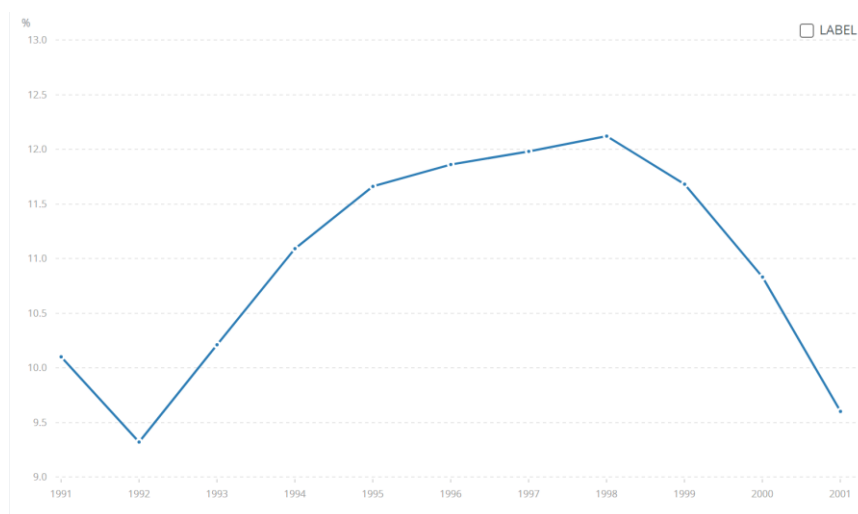


Figure 2: Unemployment rate in Italy.

Figure 2 shows the unemployment rate of Italy during 1991 to 2001. The employment rate reached its lowest point in 1992. Italy experienced a period of economic growth from the late 1980s to 1992, when GDP rose steadily. This growth led to an increase in the demand for labor, which helped to reduce the unemployment rate. During this period, Italy's population was relatively stable and grew slowly, making it easier to meet labor demand. Italy also has one of the most highly regulated labour markets, particularly with regard to hiring and firing rules and restrictions on the use of typical contracts. So the Italian government introduced labor market reforms during this period that reduced strict labor regulations and made it easier for firms to hire and fire employees. Increased labor market flexibility. It also encouraged firms to recruit, launch public works projects, and create temporary jobs to reduce unemployment.

Employment is closely linked to economic development. When more people are employed, they earn income, consume and invest, which promotes business and industry, as well as growth in GDP. More labor also means more tax revenue for the government. These funds can be used for public services, infrastructure development, etc., which are essential for economic growth.

3.1.3. Tax Evasion

There is a high risk of corruption in the Italian tax administration. And In the 1990s, tax evasion hovered between 15 and 20%. The persuasive power of the Church and its historically hostile relationship to the state have an impact on Italians tax behavior. Eastern Orthodox Church is considered the most united branch of Christianity, closely followed by Catholicism, which is considered strong social groups. Also, When government investment or public spending (e.g. social and welfare programs) decreases and taxes increase, there is a doubling of the contractionary effect on national income. This also leads to decrease in employment rate and economic growth slows down.

3.1.4. Regional Inequalities

The southern region of Italy is highly agriculturalized. Products such as pasta and wine are famous Italian exports. However, unemployment in the south is usually high and there is a lack of employment opportunities in the south. Northern Italy is more industrialized. In particular, machinery and automobiles are known for their strong manufacturing industries, which contribute significantly to Italy's exports. The northern region has a diversified economy, benefiting from better infrastructure and educational opportunities, and has stronger trade links with other European countries. Homicide rates also vary between north and south. Kingdom of the Two Sicilies, state that united the southern part of the Italian peninsula with the island of Sicily between the mid-15th and the mid-19th centuries. Kingdom of the Two Sicilies ceased to exist when Italy was united as a unitary nation-state in 1861[6]. The enduring repercussions of organized crime, originating from the Kingdom of the Two Sicilies, have left a significant imprint on the political dynamics of southern Italy.

3.1.5. Bureaucracy and Corruption

Italy is parliamentary cabinet type of government. Administrative procedures is very complex. The power system of the State is centered on the Cabinet, which has the highest executive power of the State. The Cabinet is accountable to the Parliament and is subject to its control. Most political parties have a top-to-bottom organizational system, and even a set of peripheral party organizations, such as trade unions and women's organizations, which play a supplementary role to the party's rule. The inefficiency and negligence of some people working in the public system which, as a consequence, is overwhelmed with paperwork. Administrative processes were often slow and cumbersome. This causes bureaucracy. Such delay often result in higher financial expenditures. The lack of a good bureaucratic system does not only affect the interests of each individual citizen, but also damages the economy of the country.

Italy has a multi-party system. The most characteristic feature of the Italian party system is the dominant role of political parties. However, Tangentopoli Scandal (also called clean hands) happened in Italy in 1992. In February, Bettino Craxi, the Socialist Party's main Milanese leader, was arrested and imprisoned for receiving kickbacks on projects. The anti-corruption activity spread rapidly from Milan to the whole country. It was a wide-ranging corruption investigation that exposed systemic corruption and bribery within the political and business elites, politicians. Traditional political parties embarked on the path of disintegration, division or reorganization. After 1994, there was a trend toward coalition in the Italian party landscape, which was manifested in the fusion of political parties and the formation of electoral coalitions. Partito Democratico was formed on October 14, 2007 by the merger of the Partito Democratico della Sinistra Italiana and Margherita. According to Samuel P.Huntington, corruption is the violation of accepted norms by government officials for personal gain[7]. Power belongs to the state but is held by government officials, the state belongs to a generalized collective concept, which does not have specific personality characteristics, while government officials are a specific collective concept, which has specific personality characteristics,

therefore, from the theoretical level, in the operation of power, the personal interests of government officials are prioritized over the overall interests of the state. The separation of the ownership and use of power, as well as the limited rationality characteristic of government officials lead to the absence of complete contractual norms, the result of which is to lead to the inevitability of opportunistic behavior [5]. Market failures, successive government collapses and frequent changes in prime ministers and leadership, made it difficult for Italy to implement coherent economic policies and reforms. It made long-term economic planning and investment difficult. The comparative political stability has also led to high levels of public debt in Italy. Its spending beyond its means, resulting in deficit. This limited the government's ability to respond to the economic crisis or to invest in critical infrastructure. Chronic government instability has also led to heightened concerns about Italy's public debt. It was found that Italy belongs to the "PIIGS" (Portugal, Ireland, Italy, Greece and Spain), which represents the most dangerous countries in the eurozone debt crisis.

3.2. External Factors

External factors have largely determined Italy's long-term economic distress since 1990. Understanding and responding to external influences is crucial to developing strategies that will help Italy navigate the complexities of the global economy. This article will discuss the impact of external factors on Italy's economy and finances in terms of the ERM, EC, WTO, IMF, OECD, International Economic Summits, EU Single Market and EMU.

3.2.1. ERM

The European Exchange Rate Mechanism was created in 1979 as a system for limiting fluctuations in the exchange rates of the currencies of EU member countries. Each country agrees to link the exchange rates of their currencies to each other, rather than letting the market determine exchange rate fluctuations. The ERM sets a fixed central exchange rate for the exchange rates of the member countries' currencies and allows the exchange rate to fluctuate at a certain rate above and below the central exchange rate. In September 1992, there were two opposing forces in the European foreign exchange market. One side is the central bank of the European Monetary System member states, determined to protect the mark against the pound, lira and other exchange rates, constantly in the foreign exchange market to sell the mark to buy pounds and lira; The other side is the foreign exchange market speculative forces, selling pounds and lira to buy the mark. The central bank has thrown out more than 20 billion dollars of marks, all of which were eaten by market speculators. It was on September 13th, 1992 when the Italian decision to devalue Italian Lira by 7% took place (other currencies revalue of 3.5%). The day after the British crisis ended with effectively withdrawing from ERM, it in turn flipped the pressure back upon Italy [8]. Only three days later the mark to lira ratio once again exceeded the threshold of the recalibrated exchange rate downturn, and the Italian government spent 40 trillion lira worth of foreign exchange reserves in an unsuccessful attempt to salvage the falling lira. Italy also had a generalized trade deficit during this period. Thus, on September 17th, 1992, Italy withdrew from ERM [8].

3.2.2. EC

Italy is one of the founding members of the European Community. The EC is the world's largest trading bloc, with total foreign trade in 1992 amounting to some US\$ 2,900 billion. On December 11, 1991, the Maastricht Summit of the EC adopted the Treaty on European Union, which establishes the European Economic and Monetary Union and the European Political Union. The objective was to establish a unified economic policy through the tight coordination of member states' economic policies and the achievement of a unified market across Europe. The unification of currencies, the

introduction of a consistent currency exchange rate and the development of a network of European Central Banks tasked with shaping and executing EC policies. Elimination of trade barriers between member states. Harmonize transportation systems, agricultural policies, and general economic policies among member states. Elimination of measures taken by private individuals and governments that restrict free competition. Guarantee the mobility of labor, capital, and business entrepreneurs between member states. On November 1, 1993, the Maastricht Treaty entered into force and the European Union was formally established [9].

Italy has a long-standing trade relationship with European countries. Italy's trade partnerships are influenced by its role as a member of the European Community, its strong manufacturing sector and its important position in the global economy. Germany and France are Italy's most important trading partners within the EU. Germany is one of Italy's most important trading partners within the EC. The two economies complement each other, with Italy exporting products such as fashion, machinery and automobiles to Germany. France is another important trading partner of Italy within the EC. Trade between the two countries includes the exchange of manufactured goods, agricultural products and services. Italy maintains trade relations with Mediterranean countries such as Spain, Greece and Turkey, which are also members of the EC or have close economic relations with the EU.

3.2.3. Forums and Summits

Global Trade Forums Italy actively participates in global trade forums and organizations, including the 1986 Uruguay Round of trade negotiations under the General Agreement on Tariffs and Trade (GATT) multilateral trade negotiations. The GATT provides a framework for reducing tariffs and the GATT has actively worked towards diminishing tariffs and trade obstacles, eradicating discriminatory treatment in global trade, and advancing the liberalization of international commerce. GATT was signed in Geneva on October 30, 1947, and on January 1, 1948, it began to be applied on a provisional basis. This resulted in the formation of the World Trade Organization (WTO) in 1995, an organization that actively advocated for the opening up of international trade and the formulation of global commercial standards.

Italy hosted the G-7 and G-8 International Economic Summits in 1987 and 1994, where leaders of the major industrialized countries discussed economic policies and global economic challenges. These summits provided Italy with the opportunity to coordinate policies with other influential countries, strengthening diplomatic and economic alliances with other major powers. Additionally, these summits offer economic advantages to Italy, contributing to the expansion of tourism, hospitality, and associated economic sectors.

3.2.4. EU Single Market

The European Union is the world's number one free-trading organization, and has achieved complete freedom of movement of goods, services, capital and people. The advent of the euro has resulted in increased financial market and stock exchange integration, bolstering the euro's economic standing. The member states of the EU enjoy a number of preferential policies, such as zero tariffs between the member states, same status of foreign trade, free movement of capital between member states, common surtaxes and excise taxes, etc.

The advantages are following. Italy's access to the EU Single Market facilitates the free movement of goods, services, capital and people, expanding Italy's export opportunities and attracting foreign investment. Italian businesses don't face trade barriers. Exports in sectors such as manufacturing, fashion and automobiles are promoted, increasing trade opportunities and boosting economic growth. Italy receives financial assistance from EU funding programs, particularly the Structural Funds and Cohesion Funds. These funds support infrastructure development as well as initiatives to reduce

economic disparities between regions. For example, in order to boost the European economy and help member states accelerate their recovery, from 2021-26 the EU implements The National Recovery and Resilience Plan, totaling the equivalent of €672.5 billion in economic assistance. Italy is the first beneficiary, of which the RRF alone guarantees 191.5 billion euros. Italy has adopted the euro as its currency, which simplifies trade and financial transactions within the eurozone. It also reduces the exchange rate risk for Italian businesses.

There are some drawbacks as well. Italy's fiscal policy has been constrained by EU fiscal rules, including deficit and debt limits under the Stability and Growth Pact. These constraints have limited the government's ability to respond to economic challenges. Italy also faced economic challenges such as high public debt, which at times put it in conflict with EU fiscal rules. This led to tensions between Italy and the European Commission. At the same time, membership in the EU required the cession of some sovereignty to European institutions, which reduced Italy's ability to make independent policy decisions on issues such as trade and immigration.

3.2.5. EMU

Italy is a member of the EMU and adopted the euro as its official currency in 1999. The conduct of the euro has an impact on various aspects of the Italian economy, including on inflation, interest rates and competitiveness.

The European Central Bank was established on July 1, 1998, and is the only institution qualified to allow the issuance of euros within the European Union. The main functions are to maintain monetary stability in the Eurozone, manage interest rates, currency reserves and issuance, and set European monetary policy [10]. Typically, loose monetary policy will depress the euro exchange rate, while tight monetary policy will boost the euro exchange rate. Independence is one of its distinguishing features. It is independent of EU institutions and national governments, and is the world's first central bank to manage a supranational currency. However, it is lack of autonomy. Its decision-making power is held by the European Central Bank itself, without the influence of countries. Many economists agree that the autonomy of the ECB is extremely important, as it prevents markets from being manipulated for political purposes [11].

After the official launch of the euro on January 1, 1999 Italy lost its power to independently control monetary policy, including setting interest rates, in favor of a monetary policy set by the European Central Bank. Prior to joining the EMU, interest rates in Italy were higher because the lira was considered risky. With the use of the euro, Italian borrowers were able to obtain lower interest rates, which reduced the cost of borrowing. While lower interest rates benefited borrowers, Italy lost its ability to set monetary policy independently. The ECB makes interest rate decisions for the entire Eurozone, however, individual member states do not have the same monetary policy needs. Italy's system of governance had difficulties in managing its own currency, which in turn led to the devaluation of the lira. The adoption of the euro eliminated exchange rate fluctuations between the lira and other European currencies. This led to a significant stabilization of the exchange rate, from which Italian firms engaged in international trade benefited. However, Italy faces international competition and challenges in maintaining industrial competitiveness due to high labor costs and regulatory burdens compared to countries with lower labor costs. In order to enhance competitiveness, Italy also undertook structural reforms in the 1990s, liberalizing, the use of atypical contracts and temporary agency work. The aim was to increase the flexibility of the labor market and reduce bureaucratic obstacles.

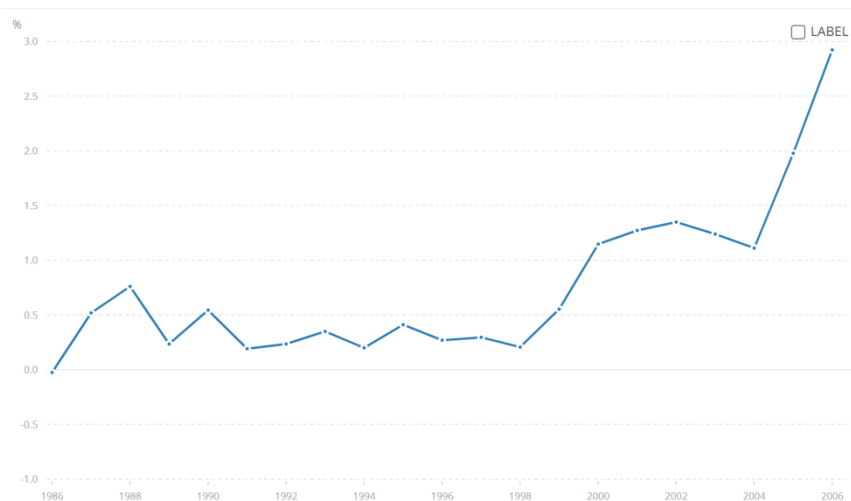


Figure 3: Foreign direct investment, net inflows (% of GDP) in Italy.

On Figure 3, we can see that foreign direct investment, net inflows in Italy fluctuated between 1986-1998, until two distinct uptrends in 1998-2000 and 2004-2006. Italy officially adopted the euro in 1999. It changed Italy's monetary policy and currency, affecting the country's economic landscape and having a significant impact on Italy's economic landscape. Italy has also established friendly relations with other Eurozone countries, that increased the net inflows. Additionally, between 2004 and 2006, a series of economic reforms were implemented within Italy to reduce bureaucracy, improve the business environment and attract foreign investment. The EU was also enlarged in 2004 to include several Eastern European countries, increasing trade and investment opportunities between Italy and these new EU members.

4. Conclusion

In summary, struggled economic growth in Italy since 1990 has been caused by multiple factors, both domestic and external. On the domestic front, Italy can continue its labour market reforms to optimize the market structure, provide job security and reduce unemployment. On the international trade front, Italy can increase foreign trade and investment opportunities by reducing taxes and simplifying regulations to attract foreign companies to invest. Although the road to recovery for the Italian economy is complex, reforms of the domestic political and economic system and a foreign trade strategy tailored to the Italian context can help Italy to embark on a more sustainable path of economic growth.

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Study on Business Model Innovation at Zhuanzhuan Company

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Abstract: Zhuanzhuan Company is committed to meeting the needs of the younger generation of consumers by offering a variety of services through diverse models such as C2C and C2B2C. This study aims to comprehensively analyze Zhuanzhuan Company's business model innovation. By introducing the company's background, consumer market analysis, business model, and SWOT analysis, it reveals the factors contributing to its success. The article also emphasizes Zhuanzhuan's innovations in trust-building, logistics management, and pre-sales and after-sales services, as well as the opportunities and threats it faces. Finally, the article offers recommendations on enhancing the credit system, optimizing the logistics system, and strengthening pre-sales and after-sales services for digital 3C and large items, to assist Zhuanzhuan Company in further expanding its market share and user base. The study found that within the second-hand trading market, Zhuanzhuan Company possesses advantages in both technological platforms and user base. The company can provide a convenient user experience. Simultaneously, its vast user base contributes to facilitating transactions and advertising revenue. Furthermore, Zhuanzhuan Company can further enhance its competitive edge through official verification, a combination of online and offline services, and effective logistics management. Zhuanzhuan Company plays a significant role in meeting the demands of young consumers and promoting sustainable development. The research presented in this article aims to assist Zhuanzhuan Company in continuously adapting to market changes and identifying opportunities to explore new markets. At the same time, we provide some recommendations for the current situation of Zhuanzhuan.

Keywords: Zhuanzhuan Company, Business Model Innovation, C2B2C

1. Introduction

The rapid rise of the second-hand trading market has sparked business model innovation, such as various transaction models like C2C and C2B2C. The emergence of these transaction models has positive implications for both consumers and the environment. It provides consumers with more shopping choices and cost-saving opportunities while also contributing to resource conservation, waste reduction, and a decrease in carbon footprint, promoting sustainable consumption and resource sharing. This is of great significance for sustainable development and environmental conservation.

Zhuanzhuan Company is a second-hand trading platform under 58.Com Inc. It was established in 2015. Through continuous business model innovation and deepening partnerships, Zhuanzhuan

Company has achieved significant success in the second-hand trading market and has become one of China's leading second-hand trading platforms. However, there is still room for further development. Relevant research, analyzing the internet second-hand trading platforms 'Xianyu' and 'Zhuanzhuan,' has found that resource allocation in the current second-hand trading market is not efficient, and there are certain deficiencies in the model mechanisms, leading to adverse effects on consumers in terms of trust, pricing, and more [1]. By continually improving the credit system, optimizing logistics management, and enhancing product innovation, Zhuanzhuan Company can continue to lead the second-hand trading market and provide young people with more sustainable and high-quality consumption choices.

This article will conduct an in-depth study and analysis of Zhuanzhuan Company's business model innovation and provide recommendations to further strengthen its competitive advantage in the market. Through SWOT analysis, this article will delve into Zhuanzhuan Company's strengths, weaknesses, opportunities, and threats, helping the company understand its internal and external environment to formulate more targeted strategies and decisions. Additionally, the article will highlight Zhuanzhuan Company's innovations in trust-building, logistics management, and pre-sales and after-sales services, as well as the opportunities and threats it faces. Finally, the article will propose recommendations for improving the credit system, optimizing the logistics system, and enhancing pre-sales and after-sales services for digital 3C and large items, to assist Zhuanzhuan Company in further expanding its market share and user base. The research in this article, by analyzing the acceptance and preferences of the younger generation of consumers for second-hand trading, can help understand the needs of this demographic in terms of sustainable development and environmental protection, while providing market insights for businesses.

2. Introduction to the Zhuanzhuan Company

Zhuanzhuan Company, established in 2015, is a second-hand trading platform under the 58 Group. In 2017, Tencent announced a strategic investment in Zhuanzhuan, providing it with resource support. This collaboration enabled Zhuanzhuan to fully leverage Tencent's social advantages and partner with WeChat, closing the transaction loop through WeChat Pay. WeChat, China's most popular social app, brought a significant amount of traffic to Zhuanzhuan and enhanced the platform's credibility [2].

Zhuanzhuan is not just a traditional consumer-to-consumer (C2C) platform but also employs a consumer-to-business-to-consumer (C2B2C) model in certain product categories. For example, in the second-hand mobile phone sector, Zhuanzhuan introduced third-party authentication services with official personnel conducting quality inspections and providing transaction guarantees. Additionally, Zhuanzhuan has established its self-operated product categories, created its self-operating system, and has also ventured into cross-border e-commerce to expand its overseas business.

Zhuanzhuan places a strong emphasis on product categorization and offers a diverse range of services, gradually encompassing various product categories. The platform provides reasonable price references, addresses the issue of information opacity in second-hand transactions, and helps consumers meet their diverse shopping needs. Zhuanzhuan is dedicated to its goal of continuous innovation, providing reliable services, and diversifying its business expansion, to become one of China's leading second-hand trading platforms.

3. Analysis of the Zhuanzhuan Consumer Market

As a generation characterized by an upgraded consumer consciousness, young people have long become the ultimate users of the second-hand trade. Young individuals, just entering the workforce, often have limited savings. Consequently, cost-effectiveness and affordability have become the top choices for many young people. In this regard, the second-hand market perfectly caters to the needs

of the youth. Furthermore, with the concept of green and low-carbon deeply ingrained, the younger consumer group does not harbor the same aversion to second-hand products as the older generation traditionally did. They widely believe that second-hand consumption is more environmentally friendly and enjoyable. Their acceptance of purchasing, using, and collecting second-hand items is exceptionally high, and they have even discovered the social aspect of second-hand transactions. Through second-hand trading, many young people have found "kindred spirits," forming different interest communities.

As shown in Figure 1, a consumer behavior research report targeting users of the second-hand market is presented. It can be observed that over 80% of users in the Chinese second-hand market fall within the age group of 18-34 years old, indicating that young people have become the main consumers of second-hand trading platforms [3]. In this context, the circular economy platform providing second-hand trading services, "Zhuanzhuan," has also gained popularity in the market and is highly favored by the younger generation.

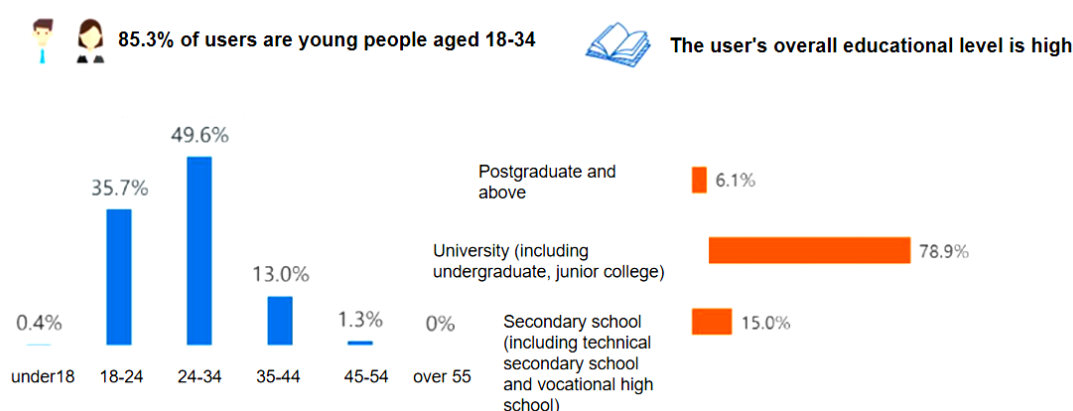


Figure 1: Consumer Behavior Research Report for Second-hand Market Users [3]

The reason behind the younger generation's closer affinity to "Zhuanzhuan" lies in Zhuanzhuan's deep cultivation of the industry chain, continuous efforts in fulfillment services, and its empowerment of the industry. It accelerates the standardization of the industry, making second-hand transactions more standardized and transparent.

Through Zhuanzhuan, consumers can sell unused items at competitive prices and also achieve a one-stop solution for selling old items and purchasing new ones. With the official Zhuanzhuan verification for second-hand mobile phones, 3C digital products, and others, the supply is guaranteed. Each product undergoes individual inspections and comes with its quality inspection report. This ensures that second-hand items, just like new products, can enjoy services like a 7-day no-questions-asked return, truly achieving a "what you see is what you get" experience.

Embracing the new consumer era, young people are now adopting a dual strategy of increasing their income through open financial management while simultaneously reducing expenses and saving money. Engaging in second-hand transactions has also become one of the avenues for contemporary young people to pursue a high-quality lifestyle. In this new wave, Zhuanzhuan Group will continue to provide users with high-quality and standardized second-hand trading services, empowering young individuals to enjoy a quality and beautiful life in the era of "financial literacy for all." Figure 2 illustrates the app's features, such as Zhuanzhuan Recycling and Zhuanzhuan Official Verification, highlighted in the red box.

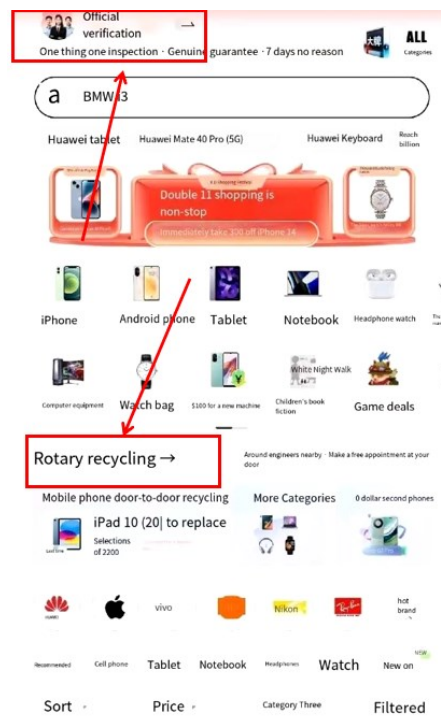


Figure 2: Zhuanzhuan App Home Page

4. Zhuanzhuan's business model

Zhuanzhuan's business model has formed a relatively complete closed-loop, as shown in Figure 3. In terms of its operational philosophy, Zhuanzhuan places a strong emphasis on the quality of products, prioritizing product quality. The core focus of Zhuanzhuan's products lies in the digital 3C and maternity and baby product categories. This is evident from the agreement reached between Zhuanzhuan, Haier, and Foxconn in 2017. Zhuanzhuan's platform model allows individuals or small businesses to sell their unused second-hand items. When selling, they can choose to sell to Zhuanzhuan (through doorstep pickup) or other consumers (by listing products on the platform). Additionally, Zhuanzhuan generates profit by charging a certain percentage of commission from the seller. This means that when a seller successfully sells an item, the platform deducts a certain percentage of the transaction amount as a fee, which is a profit model similar to other platforms.

Zhuanzhuan's advertising and promotional services primarily assist sellers in gaining higher visibility on the platform. This helps businesses showcase their products to a larger audience, and in return, Zhuanzhuan charges advertising fees. These services may include value-added options such as highlighting products, posting more photos, and featuring items on the homepage.

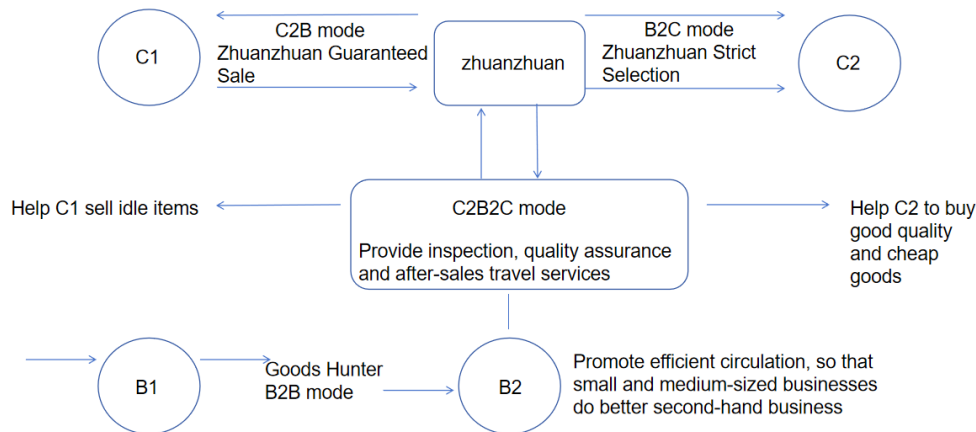


Figure 3: Zhuanzhuan Business Model Closed-Loop Process Diagram

"Zhuanzhuan Official Verification" is a relatively core function within the platform. Zhuanzhuan actively collaborates with third parties to establish a professional evaluation system for product quality, condition, and damage assessment, providing a reasonable price range. During the transaction process, professional personnel are assigned to inspect the product's quality, and they also provide live quality inspection broadcasts. This transparent, standardized, and institutionalized trading framework has set a benchmark for the industry. It has resolved the trust crisis caused by information asymmetry between both parties in the second-hand trading market.

In terms of credibility, Zhuanzhuan has partnered with WeChat. After integrating with WeChat's interface, transactions are completed through WeChat Pay, thus forming a closed loop. Zhuanzhuan aims to address trust issues among customers by leveraging the established social relationships within WeChat. This collaboration with WeChat brings the strength of Tencent's social network into the second-hand trading arena, further contributing to the elimination of trust issues within the user base of second-hand platforms.

5. SWOT analysis

SWOT analysis is a strategic management tool used to evaluate the internal strengths (S), internal weaknesses (W), opportunities (O), and threats (T) of an organization, such as a company, team, or project. The fundamental idea behind SWOT analysis is to gain a comprehensive understanding of an organization's internal characteristics and external environment when formulating strategies and making decisions. This understanding enables better utilization of strengths, improvement of weaknesses, exploitation of opportunities, and mitigation of threats.

Conducting a SWOT analysis of Zhuanzhuan can assist the company in formulating strategic plans. By analyzing the company's strengths, weaknesses, opportunities, and threats, the company can clarify its objectives and develop strategies to maximize its strengths and opportunities while mitigating the impact of weaknesses and threats. In terms of market positioning, analyzing Zhuanzhuan's SWOT helps to gain a better understanding of its position in the market. This aids the company in identifying target markets, target audiences, and competitive strategies when dealing with competitors.

5.1. S(Strengths)

Zhuanzhuan boasts a wide user base and, as a product under Tencent's umbrella, it benefits from Tencent's support and access to a significant number of potential users upon integration with WeChat. Additionally, Zhuanzhuan enjoys high brand recognition and user trust in the domestic market.

Furthermore, the second-hand goods market in China holds immense potential, particularly given the widespread adoption of mobile internet. Zhuanzhuan has adopted a mobile-first strategy, offering a convenient platform for second-hand item transactions through its mobile app downloads. This approach is more efficient compared to traditional second-hand trading, and online browsing offers a greater variety of options, catering to a wide range of user needs.

5.2. W(Weaknesses)

The second-hand market is highly competitive, with platforms like Xianyu and Guazi Second-Hand Cars, making it crucial to maintain core competitiveness. Trust is of paramount importance in the second-hand trading market. Unscrupulous businesses can negatively impact the platform's user experience and reputation. Moreover, Zhuanzhuan has certain shortcomings in its core device verification services, such as cases where the content of device verification reports does not match the actual product, which can have a detrimental effect on its brand reputation [4].

5.3. O (Opportunities)

Zhuanzhuan can strategically expand its business in moderation, such as in the areas of logistics and alternative payment methods. Additionally, considering international markets can help tap into a broader user base. With the influence of sustainable development strategies, the second-hand market is poised for further growth, and Zhuanzhuan can strengthen its market positioning in the field of sustainability. The circular economy promotes a green and sustainable development model, while second-hand transactions support recycling and reuse. In the context of changing consumer trends, the combination of the internet and the circular economy can boost the trading of unused second-hand items. As economic growth slows down, consumers may consider second-hand transactions as a more rational choice [5].

5.4. T(Threats)

Government policies and regulations may have an impact on the operation of the second-hand trading market, such as the strengthening of regulations on second-hand mobile phones or electronic products. Other second-hand platforms can potentially erode Zhuanzhuan's market share, as Zhuanzhuan entered the second-hand mobile phone market relatively late and needs to compete with users who are already loyal to other platforms [6]. The threat of cybersecurity issues is another concern, as any incidents of cybersecurity breaches and data leaks can result in a loss of user trust.

6. Zhuanzhuan's innovative strategy

6.1. Product innovation

6.1.1. Security and Trust Assurance Services

Zhuanzhuan deeply understands that building user trust in the second-hand trading market is of paramount importance. Therefore, to better serve its customers, Zhuanzhuan has introduced measures such as certified sellers, product inspections, and transaction guarantees to enhance user trust. Moreover, within the "Official Verification" module of product inspection, Zhuanzhuan offers 24-hour live streaming of the entire process, allowing customers to witness the entire process, including sorting, charging checks, functionality tests, and listing, thus providing greater assurance to customers when purchasing "Official Verification" products.

6.1.2. Expansion of Offline Experience

In recent years, Zhuanzhuan has been focusing on expanding its offline service experience with physical stores. Some of these offline stores even offer consignment and purchasing services for second-hand items. Zhuanzhuan can also help customers determine the value of their possessions, especially for precious items like art and antiques. Furthermore, Zhuanzhuan stores provide after-sales services; for instance, if a customer purchases related electronic and digital products in-store, Zhuanzhuan can offer repair and maintenance services. These offline stores can also offer home delivery services, where, through online contact and negotiation, Zhuanzhuan's offline stores can provide door-to-door service for buyers.

6.1.3. Zhuanzhuan Second-Hand Cars

Zhuanzhuan has also ventured into the second-hand car market. On one hand, Zhuanzhuan allows individuals and businesses to publish relevant information about second-hand cars on the platform, facilitating direct communication between buyers and sellers. Additionally, Zhuanzhuan offers inspection and evaluation services for vehicles to ensure the quality and performance of second-hand cars. Zhuanzhuan also has dedicated warehouses for storing some sellers' vehicles, helping sellers in the process of selling their second-hand cars. This provides convenient options for potential buyers to inspect the vehicles, including on-site and location-based inspections. After the transaction is completed, sellers don't need to handle the subsequent procedures, as Zhuanzhuan assists buyers with processes like registration and transfer. Furthermore, a third-party organization conducts re-inspections of the vehicles before delivery, offering peace of mind to the buyers and easing the concerns of the sellers. Zhuanzhuan's services in the second-hand car sector cater to both buyers and sellers. An example of Zhuanzhuan's second-hand car section is shown in Figure 4.

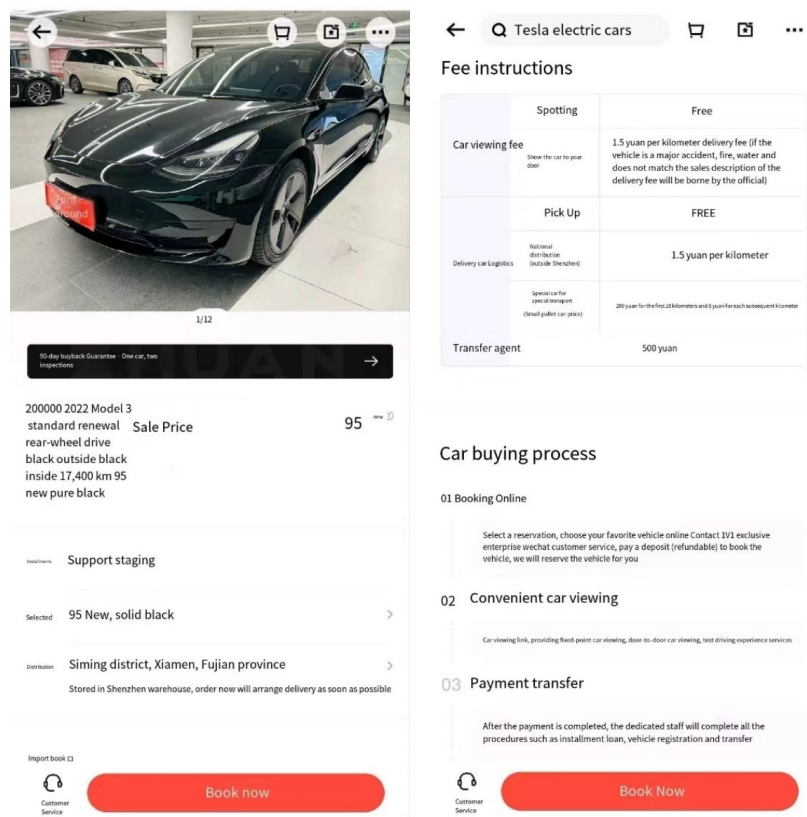


Figure 4: Zhuanzhuan Second-Hand Car Purchase Page

6.2. Model Innovation

Zhuanzhuan's model innovation primarily focuses on three aspects: C2B model innovation, the integration of online and offline operations, and logistics management.

6.2.1. C2B Model Innovation

Zhuanzhuan initially started as a C2C second-hand trading platform but gradually introduced the C2B model. In contrast to the traditional C2C model, the C2B model involves individual consumers or small-scale suppliers offering products or services, while businesses become the buyers. The C2B model is more innovative and diverse, and from a cost perspective, businesses can acquire products and services from consumers at a lower price. Additionally, businesses can even open channels for various products or services based on market demand. This approach, which combines elements of both B2C and C2C models, provides sellers with more sales channels and buyers with a broader range of choices.

6.2.2. Integration of Online and Offline

Zhuanzhuan initially provides platform support online, catering to a broader user base. Building on this, it has expanded its services offline by establishing physical stores for showcasing and selling second-hand items. This approach enhances users' brand recognition and instills greater confidence. The closer the proximity to users, the greater the opportunity for market conversion. Presently, users expect convenience from e-commerce, the ability to "shop from home and receive purchases quickly." Meeting this expectation requires a proactive integration of online and offline elements in the market. The level of offline brand recognition by users determines the brand's capacity for success in the online space.

6.2.3. Zhuanzhuan's logistics management

In the process of second-hand transactions on Zhuanzhuan, transactions of items in a free market are based on mutual communication and choice between the two parties. In the B2C model market, Zhuanzhuan offers free express logistics for buyers. Buyers only need to pay for the cost of the product and do not have to make an additional payment for express delivery. This also includes cases where a buyer wishes to return a product due to dissatisfaction, as Zhuanzhuan takes care of the logistics fees, ensuring a seamless buying experience for the users.

7. Recommendations for Zhuanzhuan Company

7.1. Enhance the Credit System

The second-hand market, unlike other markets such as Tmall or Taobao, presents relatively complex challenges for regulation. In the second-hand market, the condition and quality of the second-hand items provided by sellers are intricate. To ensure the smooth operation of the platform and protect its reputation, controlling the quality of second-hand items is of utmost importance. Therefore, Zhuanzhuan Company needs to continue enhancing its credit system to reduce instances of fraud for users during their usage. Furthermore, implementing a user evaluation and feedback system can help other users gain a better understanding of their trading partners during the purchase of items [7].

The platform can integrate anti-fraud technology, utilizing relevant algorithms to detect suspicious activities such as virtual transactions and malicious reviews and take measures to counteract such behaviors.

Lastly, the company should regularly review and improve the credit system, adjusting and optimizing it based on user feedback and the platform's development needs.

7.2. Optimize the Logistics System

It is advisable to establish partnerships with trustworthy logistics companies to enable real-time tracking and notifications while also planning and optimizing transportation routes to reduce transportation costs. Consider adding logistics insurance as well, where compensation is provided to users in case of damage to products during transportation, thus increasing user trust. Furthermore, Zhuanzhuan has declared itself as a circular economy company, focusing on "dual carbon" goals and the sustainable development of the service industry. Zhuanzhuan continues to contribute to industry standard construction and genuinely safeguards the legitimate rights and interests of consumers to promote the industry's achievement of green, high-quality development [8]. Therefore, in logistics, you can opt for new energy vehicles to reduce carbon emissions and promote the recycling of packaging materials, genuinely achieving a green and low-carbon approach in line with sustainability [7].

7.3. Enhance Pre-sales and After-sales Services for Digital 3C and Large Items

For digital 3C and large items, it's essential to provide detailed product descriptions, including product models, specifications, condition, appearance, and performance information to help buyers gain a better understanding of the products. Sellers should also provide actual product photos to avoid significant discrepancies between the item and the images, thus preventing misleading buyers.

In addition to official verification for digital 3C items, consider gradually introducing product testing and certification for various categories. Extend the warranty period to encourage sellers to offer longer warranties, thereby increasing buyer confidence.

Incorporate an AI system to assist buyers in product selection by providing online AI-based consultation to help them choose suitable products. Taking a page from Xianyu's book, introducing an instant messaging system can help buyers gain a deeper understanding of the products.

7.4. Building a Own Supply Chain System

Zhuanzhuan, despite comprehensive losses in the C2C sector, still has a substantial market in the aspect of an all-encompassing product category. If managed well, it can even rival Xianyu's C2C model. The reason it struggles to break through is because it needs to challenge the NO.1 in various tracks, and yet, the supply chain in the second-hand industry cannot be reused. The quality inspection capabilities, warehousing capabilities, and distribution capabilities required differ completely between various product categories [9]. It needs to establish its supply chain system rather than relying solely on purchasing traffic. Collaborations like the one with Zhaoliangji have not brought about any market or business expansion, nor have they brought about transformative changes in core services [10]. A comprehensive supply chain system could help turn the situation around for Zhuanzhuan.

8. Conclusion

This study conducted an in-depth analysis of Zhuanzhuan's business model innovation, uncovering its successes and challenges. It also provided recommendations for further expanding its market share and user base. First and foremost, Zhuanzhuan, as a leading second-hand trading platform, has achieved significant success with its extensive user base and high brand recognition. Its innovative business models, including C2C and C2B2C, have catered to the diverse needs of the younger

generation of consumers. Particularly in the second-hand market, young people have become the primary user demographic. This presents a tremendous opportunity for Zhuanzhuan because young consumers are willing to embrace second-hand products and are also inclined to rely on trust systems and logistics services to ensure the quality and convenience of their shopping experience.

Zhuanzhuan's innovation strategy encompasses both product innovation and model innovation. In terms of product innovation, the company focuses on providing security and trust assurance services, such as certifying sellers, product inspection, and transaction guarantees, to enhance user trust. Furthermore, Zhuanzhuan has expanded into the realm of offline experiences, offering physical stores and after-sales services to bolster user brand loyalty. In the domain of model innovation, Zhuanzhuan has introduced the C2B model, providing sellers with additional sales channels. It also offers advertising and promotional services to increase seller visibility.

However, Zhuanzhuan also faces several challenges, including intense market competition, trust issues, and the potential impact of government policies and regulations on the second-hand trading market. To sustain its success, Zhuanzhuan needs to continually enhance its credit system, strengthen its user evaluation and feedback systems, and employ anti-fraud technologies to detect suspicious activities. Additionally, the company should optimize its logistics system by collaborating with trusted logistics companies and promoting eco-friendly and low-carbon transportation methods to enhance the user shopping experience. Lastly, Zhuanzhuan can improve pre-and post-sales services for digital 3C and large items by providing detailed product descriptions, and actual product photos, and extending warranty periods to boost user purchasing trust.

In summary, Zhuanzhuan has achieved success in its business model innovation within the second-hand trading market, but there are still opportunities to further expand its market share. By continuously improving its credit system, optimizing logistics management, and enhancing pre-and post-sales services, Zhuanzhuan can continue to meet the needs of young consumers, providing them with more sustainable and high-quality consumption choices. This will further solidify its competitive advantage in the market.

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The Impact of Choice Overload on Consumers

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Abstract: Choice overload is a phenomenon in which consumers are faced with an overabundance of choices and information in modern society, leading to increased anxiety, fatigue and uncertainty. With the popularity of the Internet and the rise of social media, consumers have easy access to a wide variety of information and products. However, this also means that consumers need to spend more time and effort to sift through and compare different options. With the plethora of choices available, some consumers may feel overwhelmed, leading to decision-making difficulties and a regret mentality. Choice overload has a profound effect on consumers which exposing consumers to increased decision-making distress. This paper will classify the existing views from three aspects (impact of choice, consumer choice psychological mechanism and triggers of choice). On this basis, we give the merchants in the problem of the relevant solutions. For example, merchants can also take steps to help consumers cope with the effects of choice overload. They can provide clear and unambiguous product information, streamline the shopping process, and offer personalized recommendations and suggestions to reduce consumers' choice burden.

Keywords: choice overload, purchasing decisions, merchant response

1. Introduction

With the rise of the Internet, people's choices in commodity consumption have become very complicated, and the overload of choices has brought many problems to people. For example, difficulty making decisions and not knowing how to make the best choice from many options; Loss of satisfaction, consumers regret not choosing a more thoughtful product, and so on. Our literature will summarize some ideas about the psychological mechanisms of consumers when choice overload occurs and why product overload occurs.

Everyone has this experience: when you are hungry, many people will choose to order takeout to save time. But looking at countless foods on the delivery app, I started to worry, and spent a lot of time and energy ordering a takeaway, only to realize that time was wasted on choice. With the development of the commodity economy, the number of goods available for people to choose is increasing, from choosing takeaway, to buying a house and a car, too many choices have become the norm in our lives, sufficient choices are intended to provide consumer with a better shopping experience, but in fact this is not the case. We will find that when there are many products, people can't easily buy what they need and consumers may have a worse experience even more while merchants offer more choice. Too many choices can make it difficult for consumers to choose. This phenomenon is becoming more and more common in today's society, so many scholars have

conducted related research. In this article, we will review the literature on "too many choices can make consumer choices difficult". Due to the continuous development of society, there are more and more types of goods and opportunities for choice, and consumers are faced with more and more choices in the shopping process. However, too many choices can make it difficult for consumers to make decisions, which can influence purchasing decisions. Therefore, this article aims to explore the impact of too many choices on consumer choices and analyze the reasons for the difficulty of choice.

2. Literature review

We collected literature on this topic, collated and analyzed it. These documents are mainly developed from the following aspects:

1. Impact of choice: Numerous studies have shown that too much choice can negatively affect the decision-making process of consumers. These studies have experimentally verified that too much choice leads to more confusion, uncertainty and difficulty in making decisions for consumers. Sheena S. Iyengar and Mark R. Lepper - "When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?" [1]: This classic paper provides an in-depth study of dyslexia and introduces the notion that "too many choices may reduce satisfaction".

2. Consumer choice psychological mechanism: Firstly, we need to understand the impact of too many choices on the psychological mechanisms of consumers. Research has shown that when people are faced with a multitude of choices, they may experience psychological phenomena such as decision-making difficulties, anxiety and dissatisfaction. This is due to several key psychological mechanisms:

- 2.1 Increased cognitive load: when faced with numerous choices, consumers need to invest more cognitive resources to compare and evaluate different options. And people's cognitive capital. The ability to source and process information is limited, and a large amount of product information is more likely to make subjects perceive cognitive overload [2]. In the experiment by Jacoby et al. [3], subjects who were unwilling to buy goods from the election set reported that "evaluation is needed. Some information, too tired ", which explains why in some situations people prefer smaller sets of options instead.

- 2.2 Distraction: When there are too many choices, attention may be dispersed to too many options and not be able to focus on the characteristics of each option. This may result in consumers missing out on some important information, thus reducing the quality of their decisions.

- 2.3 Fear of missing out: The fear of missing out on the best choice is a common psychological mechanism. When there are too many choices, people may fear that they will make an undesirable choice, leading to anxiety and hesitation. Grass [4] also suggests that the intense frustration consumers experience when faced with too many choices and not knowing which product is the "right choice" is the reason why they are reluctant to choose from a large set of options, resulting in a choice overload effect. Moreover, the fact that there are fewer gaps and more suboptimal products in the large set of choices causes consumers to repeatedly think about other good choices that they did not choose, which leads to more regrets and thus affects the consumption experience [5].

- 2.4 Decision-making delay: When faced with many choices, people are often more likely to delay decision-making. They may need more time to think about and compare options, which can lead to missed opportunities or feeling stressed. The emotional load of a decision, i.e., the emotional consequences that a decision may trigger, is also a factor that leads to choice super When there are too many choices consumers may experience preference uncertainty, especially when thinking about the possible negative consequences of a bad choice consumers avoid choices and are reluctant to make a decision [6]. Consumers report an increase in negative emotions when they think that choosing one good means giving up another, and an increase in the expected experience of regret [7]. In studies where goods are presented in a "lost" frame, consumers experience particularly negative emotions

and are more likely to experience choice overload [8]. These empirical studies confirm that the emotional burden of decision-making affects the choice overload effect, and that when there are too many choices, consumers may avoid choices more in order to avoid the negative emotions that may result, and thus delay or refrain from making decisions [9].

2.5 Decision Regret: When people have made a decision, they may regret it because they fear that other unchosen options might have been better. This regret may reduce their sense of satisfaction.

These psychological mechanisms interact with each other and can lead to the too many choices effect, i.e., when people are faced with a multitude of choices, they may be more likely to make an unsatisfactory decision or simply abandon the choice.

Another important psychological mechanism is information overload. When there are too many choices and information available to consumers, they may feel overwhelmed. Information overload may lead to inattention, making it difficult to sift through and process information, which reduces the quality of decisions. In such cases, consumers may seek ways to simplify decision-making, such as relying on brand reputation, word-of-mouth or expert advice, in order to alleviate the discomfort caused by information overload.

In addition, psychologists have studied individual differences, which means that different people may react differently psychologically when faced with too many choices. Some individuals may be better able to cope with choice overload, while others may be more susceptible to psychological stress. These individual differences can involve factors such as an individual's decision-making style, cultural background, and level of education.

3. Triggers of choice: Several literatures have explored the reasons that lead to too many choices. The reasons for the overabundance of choices in the commodities market can be attributed to a number of factors that intertwine with each other to result in a plethora of choices in the market. The following are some of the main reasons:

3.1 Competitive markets: In highly competitive markets, firms often try to attract consumers by offering more choices. They want their products or services to stand out from the competition and therefore keep introducing new varieties and variants.

3.2 Diversity of consumer needs: There is a wide diversity of consumer tastes, needs and preferences. In order to meet these diverse needs, firms tend to offer a variety of options to ensure that their products or services cater to as many consumers as possible.

3.3 Technological and production advances: As technology develops and production processes improve, the cost of producing goods decreases, which makes it easier for firms to offer diverse product lines. In addition, new technologies can be used to rapidly develop new products and brands.

3.4 Market research and data analysis: Modern market research and data analysis tools enable firms to better understand consumer needs and preferences. This enables them to introduce a wider range of options in response to market demand.

3.5 Consumer demand for freedom of choice: Modern society emphasizes individual freedom and the right to choose. As a result, firms tend to offer more choices to satisfy consumers' desire for freedom of choice.

3.6 Brand Expansion: Firms usually want to expand their market share by extending their brands. This means that they will introduce new products or services related to their original brand to capitalize on their established brand reputation.

3.7 Channel Diversity: Different sales channels, such as physical shops, online shops, social media and marketplace displays, can also motivate firms to offer a diverse range of options to suit different sales channels.

3.8 Cultural and regional differences: Different cultures and regions have different needs and preferences. Therefore, in order to succeed in the global marketplace, firms often adapt to these differences and offer region- or culture-specific options.

3.9 Increased consumer engagement: Modern social media and the Internet make it easier for consumers to interact with brands and offer suggestions and opinions. Businesses may respond to consumer feedback by introducing more options to meet their requirements.

3. Empirical evidence

Scholars have conducted extensive empirical research on the impact of choice overload on consumers and have concluded the following points:

Difficulty in decision-making: Choice overload can cause decision-making difficulties for consumers. Faced with too many choices, consumers often find it difficult to make rational decisions. They may feel anxious, uncertain and prone to decision regret.

Decreased Decision Satisfaction: Choice overload can lead to consumers feeling dissatisfied with the decisions they make. As more alternative choices exist, consumers are prone to regret and doubt that they have made the best choice.

Decline in Decision Quality: Research has shown that the quality of consumers' decisions may decline when faced with too many choices. Because decision-making consumes a lot of cognitive resources and energy, too many choices can distract consumers and lead to a decline in decision quality.

Choice failure: faced with too many choices, consumers may also experience choice failure. They may pay too much attention to certain options and ignore other more appropriate choices, leading to unsatisfactory final decision outcomes.

To summarize, empirical studies by scholars show that choice overload has a negative impact on consumers. It may lead to the emergence of problems such as decision-making difficulties, decreased decision satisfaction, decreased decision quality, and choice failure. Consumers need to pay attention to adjusting their decision-making strategies when facing numerous choices in order to improve decision-making effectiveness and satisfaction.

In addition to solving problems from the consumer's perspective, we should also solve problems from the merchant's perspective. It is crucial for businesses and marketers to understand the psychological mechanisms of consumers when they have too much choice. There are strategies they can adopt to help consumers cope with excessive choice and increase their satisfaction and willingness to buy. Here are some options for merchants to address selection overloads:

1. **Streamline choices:** Reduce the number of options offered and focus on those most likely to meet consumer needs.

2. **Provide guidance and advice:** Provide consumers with information on how to make decisions, including expert opinions, reviews and ratings.

3. **Personalized Recommendation:** Use personalization algorithms to provide consumers with relevant choices based on their preferences and historical behavior.

4. **Education and Information delivery:** Provide consumers with detailed information about products or services to help them make informed decisions.

5. **Simplify interface and design:** Design user interfaces and shopping experiences to reduce information overload and cognitive burden.

Finally, policymakers can also engage, through regulation and guidance, to ensure that too much choice in the marketplace does not negatively impact consumers. For example, provide for transparency in advertising and labeling to ensure that consumers have access to accurate and useful information.

In conclusion, summarizing the main points of these literatures. Too much choice can indeed lead to difficult choices for consumers, which can affect purchasing decisions. There are a variety of reasons for this, such as excessive choice can confuse consumers, increase stress, and may even lead

to decision fatigue. In order to solve these problems, scholars have proposed the concept of choice management to provide consumers with better decision support.

4. Conclusion

The Internet exposes people's needs directly, and a large amount of information makes commodities more and more diverse. When people choose goods under the condition of overload of choice, there will be negative psychology such as fear of missing out and decision making delay. Although these studies provide us with rich theoretical basis, there are still some shortcomings. For example, most existing studies only focus on consumers' choice difficulties in the shopping process, while ignoring choice problems in other fields (such as healthcare, education, etc.). In addition, further discussion and research is needed on how to effectively implement choice management to help consumers make better decisions. Therefore, future research can expand the theoretical framework of this field and apply choice management to more fields to better solve the problem of excessive choice.

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The Marketing Strategy of Nike: Combining the Market and the Media

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Abstract: This paper using the marketing strategy related theory, first use 3C analysis and the external environment and the internal environment of the Nike China, then summarizes the Nike China's own advantages and weaknesses and facing opportunities and threats, and how to expand the advantage to seize the opportunity to reduce the threat, finally combined with the actual situation of Nike China business market segmentation and target market selection for market positioning and put forward its marketing strategy combination and safeguard measures. The paper of the conclusion for Nike marketing strategy is to choose good suitable for Nike products target market namely market. adjust the product strategy to strengthen basketball, running and leisure life products and provide product portfolio, optimize the channel strategy adjustment channel division and improve the terminal store present the way has been more to adapt to the needs of consumers, with the right price strategy and the characteristics of Nike promotion strategy, make more consumers understand, love and use Nike products, and achieve the company's marketing goals, cooperate with other brands, continue to maintain Nike market share in China. At the same time, in the process of the implementation of Nike's marketing strategy, the process management should be implemented, the organizational structure should be adjusted, and the brand building and risk control should be strengthened to ensure the smooth implementation of Nike's China marketing strategy. Through the study of Nike's marketing strategy in China, the paper summarizes how to formulate and adjust Nike's marketing strategy in the new form, which has a certain guiding role for the marketing performance and sustainable development of the brands in China.

Keywords: Nike, marketing strategy, media

1. Introduction

With the increasing frequency of trade activities between countries, more and more multinational brand companies are established worldwide. With the rapid development of the Internet and the remarkable improvement of the national income level, the Chinese people have a higher pursuit in both material and spiritual life. But at the present stage, China's sports industry and sports undertakings and other related industries are rapidly expanding and developing, with a broad market prospect [1]. Due to the huge cultural and audience consumption behaviour differences between the international market and China's local market, multinational companies must conduct in-depth research on the current situation of China's consumer market in order to formulate corresponding

localized communication strategies, so that enterprises can better carry out marketing communication activities. Founded in 1972, Nike officially entered China's sports goods consumption market in 1980. After nearly half a century of development, it has become a sports goods enterprise with a high sense of audience recognition in China. Nike's market competitiveness is self-evident, as the highest market share of the sports brand, Nike is the industry vane, whether basketball, football, running, golf, the ball, Nike has quite high-tech products, these products of nuclear technology other brands cannot copy, and the vast majority of top athletes in order to ensure the competitive level also preferred Nike send sample top brands, which makes Nike in the market has huge appeal and competitiveness [2]. With the time goes by, the brand could still be the leader company not only in China but also in the world. It because of its unique strategy. By searching and analyzing the market, it find that some companies combining the market and the media to broaden their way in selling. As the rapid development of the social media, it showed an increasing trend and a significant advantage in market. For example, the number of the TikTok has been risen to 15 million in 2023, which given a platform for the companies in business. Nike is always good at seizing the opportunity in the way of selling and improve the awareness. The paper focus on how Nike brand use the media to attract people.

The paper explores how Nike combines market and media through the method of searching the survey. The data of Nike in several media including the fund invested in some platform, the sales volume will prove the opinion.

The paper studies Nike's unique marketing strategy in how to combine the brand and media which set a good example for other companies.

2. The introduction of Nike

2.1. Consumer group

The consumer group of Nike shoes is very wide, including athletes, fitness enthusiasts, teenagers and fashion people. The age of 23-30 accounts for 30%, and the age of 30-40 accounts for 25%, indicating that the Nike consumer group is mainly young and middle-aged people. This suggests that Nike's marketing strategy should pay more attention to the needs of some consumers of age groups, and also cater to the needs of consumers at this stage in the procurement of goods [3]. Different series of products for different groups such as Air Jordan series is mainly for basketball fans. Air Max series is more suitable for daily wear. price positioning: The price of Nike shoes is relatively high, but there are also middle and low grade products. High-end products are mainly for athletes and high-end consumers, low-end products are more suitable for daily wear.

2.2. Competitors

Nike's competitors around the world include Adidas, Puma, New Balance and other brands. These brands also have a wide consumer base and a strong brand image. With youth, fashion, nostalgia and other products won a large number of consumers, and fast fashion brands, light luxury brand cooperation with sports brand, to sports and fashion fuzzy definition and concept, to focus on sports professional Nike was affected. According to STOCKX, Adidas is gaining more resources in the sports shoe market, including Yeezy [4]. To sum up, Nike shoes market is huge. A wide range of consumers believe that the brand image is excellent, but also facing fierce market competition. Company: the Nike has always been a representative brand of sports innovation and incentive, and its advertising and marketing efforts are also very large. Brand image has a strong quality assurance, sports performance and fashion and other advantages.

3. The marketing strategy of Nike

3.1. The media to spread their new shoes

With the improvement of young people's consumption level, Nike has paid more attention to young people. In today's era, the popularization of we-media represented by the Internet provides a platform for the public to vent their emotions and express their opinions, and expands the space of public opinion. New Internet applications such as blog, video, instant messaging, social networking sites and microblogging constitute the crisscross communication channels and become new and important platforms for public opinion expression. In this situation, the Internet is gradually becoming the main platform for the interaction between people. Nike caught the power of the media under the new media, although shoe media is not a very large media industry, but in the network developed today, the media has a great potential reading and fan groups, Nike will give the media send their current new products, let its evaluation and praise, publicity, this is a very clever way to get more consumer groups [5]. By researching, it find that the consumption percentage of Nike achieve at 40. It means that young people are more willing to consume the goods. So the Nike also try to do something that could attracted the young. For example, they sign jointly. Combined with the current research, it can be seen that the brand joint cooperation can be defined based on whether there are accurate products into two categories. One believes that brand joint-name cooperation is to support two or even more independent brands to reach an agreement and carry out corresponding market sales behavior, in order to use the brand assets to expand consumers' cognition of the brand and improve consumers' attitude towards both brands. The other is that brand joint cooperation is the deep cooperation between two or more brands within the market scope to launch a new product or service in a new market [6]. Nike has cooperated with many other fashion brands even luxury brands. It has been cooperated with supreme lv, off-white. etc. Recently, Nike cooperates with Tiffany co., and make a shoe using the model of Air Force 1 and the color of Tiffany co. The two brands' logo are both on the shoes. As for the price, it was 10 times higher than an pair of Air Force 1. By searching on the app, it finds that the simple Air Force 1 was only about 500 yuan, but the special one achieve at 5000 yuan. Even though, it also difficult to obtain because of its limited quantity. At present, Nike sells about 50 Air Jordan limited products every year, and the selling rate of this part of the limited products has always been maintained at 100%. Many Chinese consumers line up all night to draw lots to buy the limited products. This kind of heat is difficult for competitors to replicate, even if it is copied, it is impossible to do that Nike has a large number of shoes are heated by consumers every year [7]. That's the unique selling strategy Nike has done. It seized young people' psychology of comparison. Not only do like this.but also concentrate on spreading effect of the brand. It sends veidoes in the short video platform like TikTok, kauishou, deeply loved by young people. In conclusion, the media worked a significant effect on Nike' market. And the selling way, limiting quantity could work well on young people. It should be learnt by other fashion brands.

3.2. The invest in plenty areas of sports

Nike worked as a sport brand,its target consumer should be the people who like sports So they focus on sports event, Nike invested plenty areas of sports. For example, in the football World Cup. Nike has sponsored a total of 13 teams, including the host Qatar, the 2018 champion France, and Croatia and England in the 2018 quarterfinals, which is the biggest sponsor. It has invested almost 1.5 billion in 2022 world cup. Compared with the effort, Nike has got more than 10 times reward. NBA, one of the biggest basketball sports event in the world watching by millions audiences everyday. Nike provides the competition supplies like shoes, jerseys. The audiences saw that their favorite player racing in the game and wearing the shoes, jerseys. They would also willing to follow their idol. After

that, the business opportunity appeared, they would buy the shoes, jerseys that their idols wear. The strategy of sponsorship effect seemed would lose fund, but it will earn much more than paid in a long run [8-9].

3.3. The strategy of idol effect.

With the rapid development of the sports events, sports stars become more and more popular which are appreciated by millions fans. Nike use the strategy of idol effect. First of all, an enterprise should have star endorsement is certain, will bring improved knowledge Name degree, establish a brand image and a series of benefits. But for the sports brand generation There are many requirements: outstanding achievements in their own competitive events, Have a good personal image outside the field. For now, Nike's ads In, make full use of creativity to brand and the most exciting events and sports Star's outstanding performance connects it, conveying its brand spirit, Make the brand deeply rooted in the hearts of the people [10]. Endorsing and cooperate with them. For example, Nike signed the lifelong contract with the famous basketball player, Lebron James as the price of 1 billion. Nike help their signed players to design their own equipment, and the players wear their equipment in the competition since 2001, top NBA stars have been visiting China almost every summer. At first, these stars visited China for nothing more than sightseeing and experience the foreign customs. But in recent years, both the number and the quality of the number of stars in China have changed a lot, beyond the past. Every summer, NBA China Travel seems to have become a traditional show for them. And these stars are no longer just for fun, and not just for first-tier cities. On the contrary, on the contrary, it gradually turned to the provincial capitals of China, and carried out interactive programs between stars and fans. For example, some stars attend fan meetings, some personally host the basketball training camp to train fans, and some directly interact with fans to send shoes to fans [9]. Then their fans saw the games, the stars wearing the shoes, they would like to copy and follow their stars. They would spend their money on the equipment that same as the player wear.

4. Discussion

With a long history development, Nike has established for more than 50 years. It made a deep impression on people as a sports brand. But nowadays, it also try to be follow the luxury brands which has their own brand culture. It creates a brand image as sports and fashion brand. Their mission Statement: (1) Create excellent products so that athletes around the world can give full play to their best level. (2) Vision: Become the world's leading, influential and innovative sports brand. (3) Core values: passion, enterprising, trust, responsibility, fairness, courage and service spirit. (4) Brand slogan: Just Do It (just do it). In addition to the above points, Nike also attaches great importance to the personal development and innovative thinking of employees, pays attention to environmental protection and social responsibility, and is committed to promoting sustainable development. Brand culture is the key of the company which promote the brand have a sustainable development. It could encourage the staffs have a activate attitude and spread aspiring spirit.

In conclusion, the reason why Nike has a sustained and stable development is its unique strategies. To be brave to take risks, it has a long-term goal and good at seizing the business opportunity.

5. Conclusion

Why the NIKE sporting goods are so popular with the Chinese public? First, it uses the strong social sports organization, high ratings of the media advantages, the sports world Superstar drive to create "artificial influence", and make such resources as the main marketing means; on the other hand, into sporting goods advanced science and technology, which is the core factor to attract Chinese

consumers. For such a strong competitor, our country sporting goods industry how to leave the current predicament and be reborn?

Carry out preferential development policies to build elite sports brands. The development of sports industry economy is inseparable from the support and policy of the government. Guide, the government should actively do a good job in the development of sports industry support, guide Those who are normative. The government should focus on planning the pattern of Chinese sports market. From the root This is to find out the actual development level of China's sports goods industry, for the real Force of enterprises to give preferential development policies, to help enterprises develop, brand conduct propaganda. The government should focus on planning the pattern of Chinese sports market. From the root, this is to find out the actual development level of China's sports goods industry, for the real Force of enterprises to give preferential development policies, to help enterprises develop, brand conduct propaganda [8].

Make full use of trend current affairs and nostalgia marketing preferred parallel. The current international current affairs and social trends represent the general interest of people nowadays, at this time if can timely and accurately find this trend, for the enterprise Even in the whole development process will have a strong guiding role. in compliance with Nike didn't follow the running and fitness craze, and it was hard to grow A global brand as famous as Adidas. At the same time, the AJ Series is and the use of social trend this means relative, also achieved Great success. But whatever the marketing strategy is used, Nike has always been there Around the core value of its brand in the human engaged in sports, challenge since sportsmanship.

Find the right brand spokesperson, an enterprise has celebrity endorsement, which will improve knowledge degree, and establish a brand image and a series of benefits. But for the sports brand generation. There are many requirements: outstanding achievements in their own competitive events, have a good personal image outside the field. For now, Nike's ads In, make full use of creativity to brand and the most exciting events and sports star's outstanding performance connects it, conveying its brand spirit, make the brand deeply rooted in the hearts of the people.

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Reasons for Germany's Economic Success in Recent Years

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Abstract: In this paper, I mainly talk about the changes of the German economy in recent years, and I will write about the changes of the German economy from four different perspectives, I think these four aspects will have a greater impact on the German economy. The first is the German manufacturing industry, we all know that the German manufacturing industry is a major source of the German economy, but due to some changes in recent years, will it have an impact on the German manufacturing industry? The next question is whether inflation in Germany will have a small impact on the national economy. In addition, I want to talk about the employment problem of Germany. As a developed country, will the epidemic, war and other factors affect the employment rate of Germany? Finally, I will talk about Germany's fiscal policy, and I will describe some of the policy improvements and changes made by the German government.

Keywords: Germany, economy, financial effect

1. Introduction

Due to the impact of the novel coronavirus epidemic and the Russia-Ukraine war in recent years, the economy of most regions has been hit to varying degrees. Some places may suffer a greater blow due to their weak national strength and lack of rich basic resources, while some developed countries are less affected due to their better economic conditions. This has caused their economic level to suffer different levels of decline. In the following article, I will take the German economy in recent years as an example to explain the economic changes in Germany in recent years and my forecast of the future economic situation.

2. Analysis of German economic situation

2.1. General overview

The German economy has withstood the impact of two COVID-19 shocks during the previous winter six months. Following a minor decrease of 0.3% in the last quarter of 2021, the economy has managed to rebound in the initial quarter of 2022, with a recent increase of just under 1% below its pre-crisis worth in late 2019. The progress of the economic recovery has come to a halt. The contact-intensive services sector experienced a resurgence in economic activity starting from January 2022, playing a crucial role in the 0.2% growth of the German economy during the initial quarter. Currently, both external and internal elements are influencing the growth of the German economy. The beginning of the year has been highly successful for the German construction industry, largely due to the high

volume of orders placed and the pleasant winter weather. According to the head of the BDI, the German economy may experience a "stop-start year" as a result of the coronavirus pandemic and disruptions in the supply chain caused by the Russia-Ukraine conflict. Despite the current order book, industrial production will be affected by chips, components and raw materials for a long time.[1] The German Federal Statistics Office published data on February 8, 2019, indicating a 1.5% growth in Germany's quarterly exports for December in comparison to the previous quarter, surpassing the anticipated 0.4% increase in quarterly imports for December by 1.2% compared to the previous quarter, which also exceeded the expected 0.5%. In spite of this, the German economy has been the worst in the past five years throughout 2018. According to official data, the German economy experienced a decline in growth to 4.5 percent in 2018, compared to 22 percent in 2017, marking the lowest annual growth rate since the European debt crisis. Following the publication of the gross domestic product data, the euro experienced a decline of nearly 0.4 percent, settling at \$1.14.

2.2. Manufacturing in Germany

However, it must be acknowledged that the German manufacturing sector experienced a lack of economic growth in the initial quarter. The world is going through a lot of changes in the economy and politics. The ongoing global pandemic of COVID-19, the intensification of regional disputes, and the growing protectionism of global trade between China and the United States are all having a detrimental effect on the security and stability of the international industrial chain and supply chain, making it difficult for the manufacturing industry to progress.[2] The war in Ukraine has already made its initial effects apparent in this context. The imposition of sanctions in March led to a significant decline in exports to Russia. Germany experienced a 1.2% decline in its overall goods exports within a month. Furthermore, the conflict worsened shortages in the availability of raw materials and intermediate products, particularly the German automotive sector which was forced to suspend production in March. Ultimately, the combination of bottlenecks and a significant surge in energy prices has led to an escalation in production expenses, consequently affecting the prices of producers. Consequently, there has been a decline in purchase orders for German industrial companies since the start of the year. The May annual rate of change in the German CPI is depicted in Figure 1.

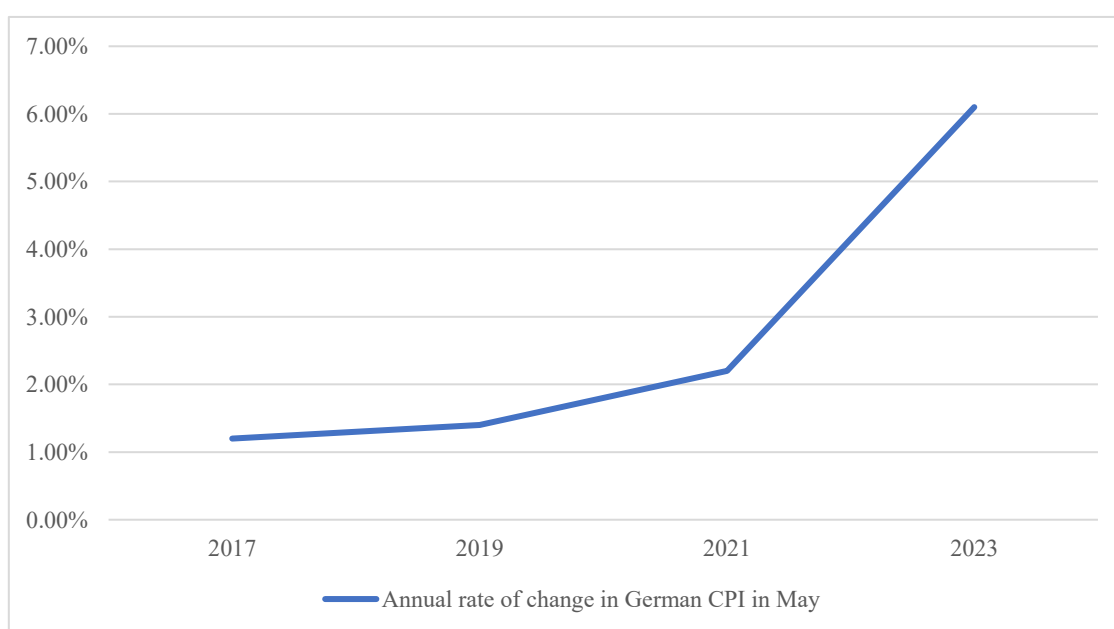


Figure 1: Annual rate of change in German CPI in May

2.3. The rate of inflation in Germany

Early indications of elevated inflation in the consumer economy are also apparent. The month of May witnessed a 7.9% surge in consumer prices. Verbeke claims that due to the exceptionally low prices, she is actively seeking methods to cut costs. I used to commute to work by car, but now the cost of fuel has skyrocketed, parking is costly, and the price of gasoline has doubled, so I usually opt to take the bus or cycle to my job. In the past, we would purchase bread and yoghurt from supermarkets, however, the rapid increase in prices has compelled us to prepare them in the comfort of our own homes in order to cut costs. "As stated by Tanya Seidel, a 31-year-old homemaker. "Despite Seidel's husband's satisfactory salary as a department head at a mid-sized company, she opted to reenter the workforce due to concerns about the sustainability of her finances. [3-5] Besides energy, the cost of German cuisine has notably risen in the past few months, and it is not possible to purchase a substantial amount at the grocery store for over 100 euros. Other goods and services experienced a much more rapid increase in prices than the norm. The first quarter witnessed a lack of growth in private consumption, attributed to a significant surge in service expenditures.

It is anticipated that Germany's inflation rate will hit 6.8% in 2023, the highest it has been since 1974, thus hindering the revival of private spending. This could be the primary cause of the dismal atmosphere in the German retail industry. The German government's two relief packages resulted in a decrease in taxes and an increase in transfers. However, the decrease in buying power resulting from the significant surge in prices might not be compensated by a rise in net wages or an augmentation in government transfers. In Germany, disposable income is projected to increase by 6.2% this year, which is lower than the cost of living for consumers. The price reductions in the relief package, including the elimination of the EEG levy, the €9 fare on public transport, and a temporary decrease in fuel duty, have already been factored in, resulting in a reduction of inflation by approximately 0.5 percentage points this year. (Figure 2)

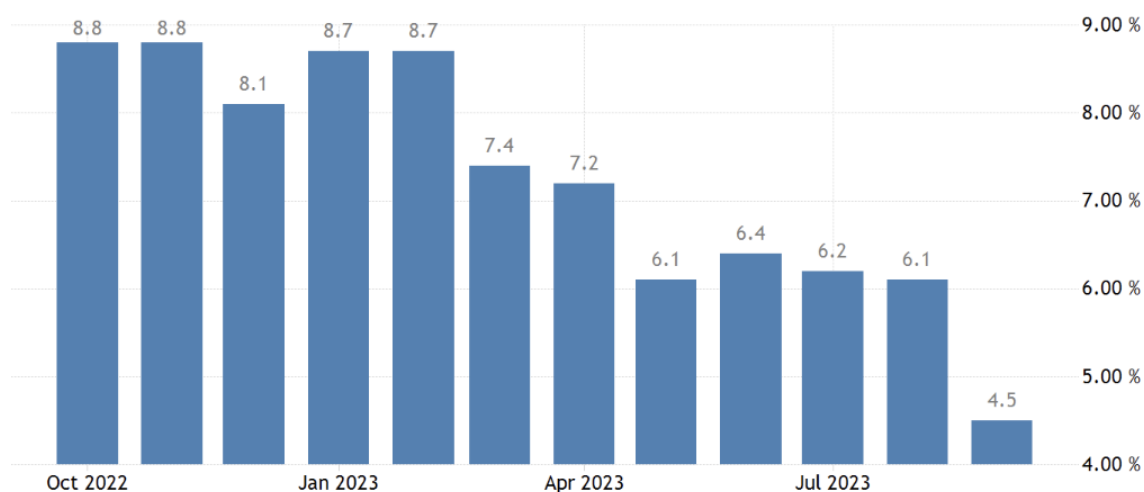


Figure 2: Tax changes in Germany in recent quarters

The tax landscape in Germany has experienced alterations in the past few quarters.

The COVID-19 pandemic is largely responsible for the current high inflation. The VAT rate in Germany, which was reduced last year as a result of the COVID-19 pandemic, has been reinstated this year. The expansion of the world economy has caused a dramatic increase in the cost of oil and gas. The implementation of a carbon tax in Germany has led to an increase in the cost of energy.

In addition, some of the supply chains that have been impacted are also reducing their availability, resulting in an increase in prices.

The current high inflation can be attributed to a variety of factors. The base effect of low prices in 2020, specifically the temporary decrease in VAT rates in the latter half of the year and the decrease in mineral oil product prices in 2020 (due to their standardization at previous levels), is once again exerting a growing influence on headline inflation. The consumer price Index has only partially or to a lesser extent reflected in the significant price increases at the upstream production stage due to continued supply chain disruptions in international trade, which are also crisis-related effects.

The current increase in energy costs is the root cause of inflation, as indicated by the base effect. As an illustration, heating oil (+76.5%) and fuel (+28.4%) have become considerably pricier compared to 2020. There was a 14 percent increase in the prices of energy products. There are numerous underlying factors that contribute to this. In addition, the rise in the global economy and the consequent worldwide need for energy have caused prices to soar in international energy markets. The implementation of the CO₂ tax at the start of 2021 is having a growing influence on the inflation rate of energy products. In September 2021, food prices rose at an above-average rate of 4.9%, in addition to energy prices. The lack of agricultural products, such as vegetables, was largely caused by inclement weather in Spain and Italy [6-7].

In general, inflation is increasing as a result of supply-side influences. The cost of production and intermediate goods, including energy and unprocessed foods, is rising, making consumer goods more expensive. With the exception of the energy and food categories, inflation currently stands at 2.9%, marginally surpassing the inflation target set by the European Central Bank (ECB).

2.4. Job prospects in Germany

The German government has always prioritized social innovation. Two-thirds of Germany's R&D investment comes from enterprises, with small and medium-sized enterprises playing a key role in it. It is anticipated that Germany's labor market will persist in its recuperation from the coronavirus pandemic. Despite the war in Ukraine, supply bottlenecks in important intermediate goods, and worsening skilled labor shortages, this momentum will slow significantly. It is anticipated that the workforce in Germany will grow by approximately 626,000 in 2022 and 190,000 in 2023. It is anticipated that the current unemployment rate will be approximately 302,000 lower than the figure from the prior year and an additional 24,000 in the upcoming year. Consequently, the unemployment rate will decrease from 5.7 percent in the previous year to an average of 5.0 percent in 2022 and 2023. The German government has been taking a proactive stance on the macroeconomy, resulting in a robust job market. Despite the low unemployment rate, there has been a steady rise in the number of people employed. [6] This year, Germany has generally adopted a neutral fiscal policy. The government's financing deficit for this year will be reduced by 50% to approximately 65 billion euros when compared to the previous year. This pattern is expected to persist until 2023. At that point, the shortfall will amount to slightly less than €12 billion. Due to the decrease in the deficit and the rise in GDP, Germany's overall government debt is projected to drop to 62.6% by 2023. The unemployment rate for them is still twice as low as that of workers with vocational education. It is anticipated that Germany will experience a 0.4% quarterly growth in its overall economic output during the second quarter of this year. The German economy is expected to rebound at a more robust rate of 1.2% and 1.4% in the latter part of 2022, followed by a gradual transition towards average growth. Overall, the German GDP is projected to increase by 2.5 percent in the current year and 3.7 percent in the upcoming year. Due to the unpredictable nature of the war in Ukraine, this forecast computes two scenarios.

3. Analysis on the economic development of Germany

Germany is one of the most economically developed countries in Europe, with a development level that is ahead of the rest of the world. In the last few years, the German economy has seen a steady rise in growth, with the aggregate, inflation rate, and employment rate all showing signs of improvement, resulting in a more prosperous economic state. What factors contribute to Germany's economic expansion? The success of the German economy is not only attributed to its sound economic strategies, but also to its advantageous trading climate, abundant resources, cutting-edge science and technology, and other elements. Robust economic strategies Germany has a well-developed system of economic policy control, and has been taking proactive fiscal measures and relaxed monetary regulations for a long time to foster economic growth. Furthermore, the German government has implemented reforms to enhance the market atmosphere, generate more employment prospects, and foster the sound growth of the economy. The trade environment is favorable. Germany has a strong trade system and has established good trade relations with the rest of the world, which provides a strong support for Germany's economic development. The German government has not only taken an active role in regional free trade agreements, but has also advanced multilateral trade talks, broadened German export markets, and invigorated German economic development. I will use apple juice as an example to illustrate Germany's import trade. Apple juice is a key component in the production of beverages, often used for blending, and is the second most popular fruit juice product globally after orange juice [8-10]. No other country produces or trades apple juice as much as China. The majority of Chinese apple juice is shipped to the United States, Japan, and Germany. In 2011, China exported 1.07 billion US dollars of apple juice, with 60 million US dollars being sent to Germany.

There is an abundance of resources. Germany is situated in Europe, boasting cutting-edge industrial technology, abundant natural resources, advantageous geographical position, as well as an excellent educational system and state-of-the-art science and technology, all of which are essential components of Germany's economic growth. The report indicated that Germany allocated 1.11 billion euros towards 7,365 in-transit projects and 1,661 new research projects in 2022. The Helmholtz Institute, renowned as one of the world's largest, received a substantial sum of 320 million euros.[9] State-of-the-art technology Germany has long been devoted to technological advancement, playing a crucial role in fostering economic growth. Germany's cutting-edge automotive production, software engineering, and cutting-edge electronic information technology have been instrumental in driving its economic growth. Germany is home to six major technologies, namely nuclear energy, automotive industry, rail transit, semiconductors, medical devices, and optical lenses [10]. There is no question that these are high precision technology, the level of science and technology of a country is very strict requirements, and Germany's six major technology products are ahead of the world. This can be seen as Germany's high level of science and technology.

4. Conclusion

In conclusion, Germany's economic growth has been steady and robust in recent years, largely due to its economic policies, favorable trade climate, abundant resources, and cutting-edge technology. The German government should persist in formulating and executing economic strategies, enhance the trading atmosphere, broaden export markets, bolster scientific and technological advancement, and endeavor to reach a higher level of economic growth.

The German economy has withstood the impact of two COVID-19 shocks during the previous winter six months. Following a minor decrease of 0.3% in the last quarter of 2021, the economy has managed to rebound in the initial quarter of 2022, with a recent increase of just under 1% below its pre-crisis worth in late 2019. The progress of the economic recovery has come to a halt. The contact-

intensive services sector experienced a resurgence in economic activity starting from January 2022, playing a crucial role in the 0.2% growth of the German economy during the initial quarter. The German construction sector has experienced a robust beginning to the year, primarily reaping the rewards of substantial orders and a balmy winter.

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Analysis of Italian Economic Fluctuations Based on Keynesian Framework

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Abstract: After the coronavirus-caused global recession, governments implemented various contingency measures to revive their economies worldwide. Despite improving digital marketing and international business relations, adverse effects still need to be addressed, and the issue takes time and money to resolve. Italy is one of the EU's most economically powerful countries, but COVID-19 has hit it hardest. This article will analyze relevant data and examine the causes of statistical fluctuations to explain Italy's economy. There are various reasons why Italy was so heavily infected. This study uses the concept of aggregate demand in Keynesian economics to analyze Italy's economic model and gross domestic product (GDP) composition. In addition, by looking at the policies and other influential factors, the paper explores the current economic situation the Italian government is in. By providing some overview and further explanation of the data, the paper underscores that Italy has made a remarkable recovery after COVID-19 using investment support. However, the government is now too dependent on it, and its GDP structure has to change to improve its performance in solving the surging public debt and deficit issues.

Keywords: Economic growth, Keynesian, Gross Domestic Product, COVID-19

1. Introduction

Italy's economy had a resurgence after being impacted by COVID-19 and the global oil crisis created by the Russian-Ukraine Crisis. Italy is working toward its objective of repairing the enormous economic issues it faces, including significant deficits and a considerable weight of public debt. Despite this, the country's GDP in 2022 ultimately rebounded to virtually the same level as its GDP in 2019. Despite the fact that its circumstances do not appear to be ideal, it had one of the finest performances anywhere in Europe. After a meteoric rise in 2021, the economic growth rate decelerated in 2022. Following a time of expansion during the first quarter of 2023, the Gross Domestic Product (GDP) saw a period of contraction during the second quarter, which resulted in a decrease of 0.4% quarter-on-quarter. This dip was mainly attributable to a decrease in domestic demand and, more notably, a drop in investment within the building industry [1].

Thus, the research aims to integrate the information regarding Italy's current economic condition in the complex global economy. The Italian economy had experienced a drastic plummet during the recession caused by the coronavirus. Although it seems to be recovering, the recession is further and more profound, influencing its economy and exacerbating the nation's inherent issues. During the virus, the Italian government changed their GDP structure to combat the indirect negative impact in

the short term, which resulted in other adverse factors. This paper seeks to overview those factors, their cause and consequences using the Keynesian economic theory to analyze the data.

This inquiry will primarily concentrate on the ramifications of the coronavirus, which will be examined in more depth. The paper will explore economic development theories from various schools of thought during the upcoming sessions. It will engage in a discussion about the economy's current status, adopting a macroeconomic perspective. Additionally, It will go into an in-depth analysis of the crucial factors associated with the aggregate demand theory proposed by Keynesian economists. Furthermore, this study will examine the implemented policies in reaction to the virus and elucidate the external and internal factors that influence the fluctuations in the nation's economy.

The following section will overview several schools of thought on economic growth and the methodology. The third section of this paper will include a macroeconomic analysis of the Italian economy and a deeper explanation using the aggregate demand theory in Keynesian economics. In the fourth section, there will be an overview of some important policies and decisions made by the Italian government after COVID-19. The fifth section will summarize the internal and external factors contributing to the changes in Italy's economy. In the last section, a conclusion will be made to conclude the findings and further predictions for future developments.

2. Theory about economic growth

Despite the 2.5 million years of human history, economic progress is just 250 years old. Economic non-growth was typical before the Industrial Revolution, and growth was unusual. People seldom ever discuss economic growth, much less express concern about it.

In the current society, the research on economic growth is usually divided into five categories: classical economic growth theory, neoclassical economic growth theory, endogenous economic growth theory, development economics growth theory and institutional economics growth theory. Amidst these, the classical economic growth theory, the neoclassical economic growth theory, and the Keynesian economic approach will be the major topics of this part of the paper.

2.1. Classical Economics

Following the Industrial Revolution in the 18th and 19th centuries, the classical economic growth theory developed primarily the methods and elements that influence economic growth. The paper will introduce the theories of Adam Smith and David Ricardo as two representatives of this school of thought to illustrate the notion of economic growth in classical economics. In Adam Smith's book *The Wealth of Nations*, he illustrated the factors that contributed to the development of society's productivity with a representative example of the pin factory. The kernel of this sample was the division of labour, in which he narrowed the approaches to achieve economic growth in two primary ways: increase the amount of productive labour and improve labour efficiency. "The greatest improvements in the productive powers of labour, and most of the skill, dexterity, and judgment with which it is directed or applied, seem to be results of the division of labour.[2]" He illustrated how the division of labour increases labour productivity and is essential for economic progress using the example in the book. Beyond that, another crucial factor in sustaining economic growth is the ability of capital accumulation and investment to keep the manufacturing process going. Based on land rent, wages, profits, and other aspects of Smith's theory, Ricardo made a more systematic elaboration. In contrast to Smith, he emphasized the importance of distribution in capital accumulation and reproduction and held that profit was the primary driver of economic expansion. He demonstrated through the analysis of diminishing marginal returns that the fall in profit rate is unavoidable with continuous production, making it harder to continue capital accumulation and causing economic growth to continue to slow or even cease.

Economists first started to take note of the variations and changes caused by various national systems in the 1950s. Before this, while attempting to explain economic growth (as previously said), economists concentrated mainly on technical factors (capital, labor force, technology, investment, consumption, and exports). In the following two portions of this part of the paper, the author will introduce the two major economic growth theories widely used by the population nowadays.

2.2. Neoclassical Economics

Neoclassical growth theory was created in 1956 by Robert Solow, an economist at the Massachusetts Institute of Technology. The following year, in 1957, he researched and analyzed the factors that led to the early to mid-20th century economic expansion in the United States. This idea subsequently evolved into the widely accepted theory of economic growth with the addition and advancement of some other economists. Neoclassical economics substituted the marginal utility value theory for the labour value theory and the supply-centric analysis for the demand-centric analysis of the classical economy. The entire economy is viewed as a "production function" in neoclassical growth theory, where factor inputs serve as the independent variable and output—often measured by GDP—as the dependent variable. The technology stock determines the production function's shape. The greater the output for a given factor input, the more sophisticated the technology, and the most straightforward production function only uses labour and capital as inputs. Following the neoclassical paradigm, Solow makes the following assumptions: the economy exhibits consistent returns to scale; the proportions of labour and capital add up to one; and the cause of real growth above one is technical advancement, or "Total Factor Productivity" (TFP). In other words, the total factor productivity is the excess, or residual, in a regression analysis that labour and capital cannot explain. Neoclassical growth models dominated the explanation of growth, with which researchers and economists measure economic growth in almost every country.

2.3. Keynesianism & New Keynesianism

Keynesian economics is another popular hypothesis of economic expansion. It was initially used to explain short-term economic volatility rather than economic development. However, the Keynesian theory has developed into the most popular economic model to explain economic growth. Today, Keynesian economics is used by academics, government officials, corporate executives, members of the media, and even the general public when debating and predicting economic growth rates. The British economist John Maynard Keynes, whose *The General Theory of Employment, Interest and Money* was published in 1936, rejected the conventional wisdom that wages and prices could adjust quickly to bring all markets into equilibrium. He claimed that because wage and price adjustment was slow, the market would instead be disequilibrium, a persistent imbalance between supply and demand. According to Keynes' theory, unemployment remained because the wage-price adjustment was too gradual to match the number of employees required by businesses with the number of open positions in the market. Keynesian economics focuses on aggregate demand theory. Keynesian theory examines economic growth from the demand side, as opposed to the neoclassical growth model, which investigates it from the aggregate supply (output) side. This theory contends that investment, consumption, and net exports are the three variables that determine economic growth, just as the neoclassical model determines economic growth by capital, labour, and total factor productivity.

2.4. Methodology

The "invisible hand" was believed to operate effectively under the classical premise, and classical economists contended that the government could only have a little impact on the economy. Classical economists also stressed government measures' ineffectiveness or unfavourable effects on desired

goals as prescriptive counsel. As a result, many classical academics think that the government should refrain from taking any direct action to address economic cycle issues. In contrast, Keynes advocated expanding government spending power and product demand to remedy the high unemployment because firms would need to increase labour force levels to accommodate the rising market demands for their goods. As the newly recruited employees make more money, they will spend more simultaneously. The demand for goods coming from the opposite side will rise as a result, generating employment. Keynes was inclined to question the “invisible hand” of the free market economy, in contrast to the classical school, and he prompted the role of the government in fostering the macroeconomy. However, the influence of the government and the results of its policies and other important economic decisions are inevitable in a contemporary and complex economic world, especially in light of the COVID-19 global virus.

Keynesian economics provides a complete theoretical framework for studying the contemporary world economy as it puts forward the concept of insufficient effective demand. Deriving from this, the method of using discretionary monetary policy to stimulate the economy appeared. Expansionary fiscal and monetary policies are adopted when the economy is declining, and tight monetary and fiscal policies should be adopted when the economy is overheating. Due to the current COVID-19 pandemic and the rise of the anti-globalization trend, the world economy is entering a recession trend. Therefore, in coping with economic recession, various countries have adopted some active policies to combat the economic recession, and Italy is the same. Through the analysis of Keynesian theory, this paper will conduct a detailed analysis of the Italian economy in aggregate and structure and try to find deeper reasons for the current situation.

3. Macroeconomic view of Italy's economic situation

To determine and understand the current economic status of Italy, the GDP has a significant role as representative data of the entire economy in a collective data published this year in May by researchers who are a member of Statista. Italy had the fourth highest GDP in Europe, behind Germany, the United Kingdom and France. The paper will then explain the fluctuation it experienced in the past five years.

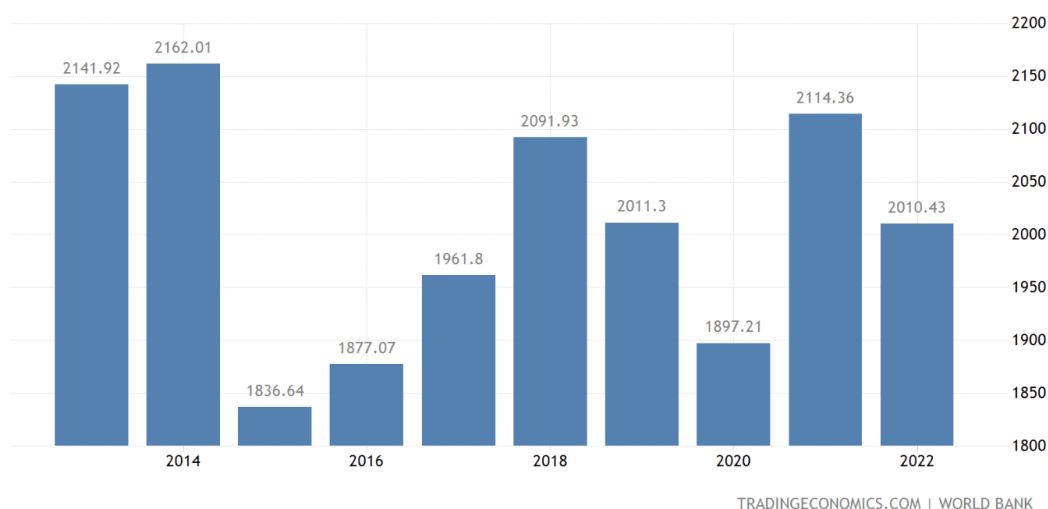


Figure 1: Italy's Gross Domestic Product in the Nearest Ten Years in USD Billion

The data from the World Bank shows the two key slump points from 2014 to 2015 and 2019 to 2020. After the plummet in 2014, Italy's GDP never returned to 2150 USD billion (Figure 1). The

Italian economy is believed to never recover from the global financial crisis of 2008, resulting in a sustained decline in production, which is a critical factor in the decline in GDP. During the onset of the global financial crisis, Italy was compelled to implement borrowing reductions due to its membership in the eurozone [3]. In addition, other factors that impacted the stagnated GDP may be the decreasing proportion of investment and a sudden increase in debt ratio, which will be explained later in the paper.

Italy's GDP at current prices was 2,011.3 billion U.S. dollars in 2019. However, COVID-19 caused a global outbreak in 2020, resulting in a decline in all nations and dwindled Italy's GDP to 1897.21B. Italy is a country highly dependent on its services. Thus, the plummet seems not inscrutable because the government had to introduce quarantine and contact measures to prevent the virus in that condition. Therefore, consumption expenditure stagnated after the drop, in addition to a growing unemployment rate [4].

Although the state of the world economy is always complicated and competitive, the data listed proves that Italy has favourable growth trends in most parts of the economy with improved performance in these few decades. Unprecedented GDP growth was found in 2021 and was the highest in four decades. Though the trend has decelerated, sustained growth is still happening, symbolizing its healthy status. However, inevitable and apparent long-term problems such as ageing populations, regional differences in development, low rates of female labour force participation, slow productivity growth, stagnant wages, tax avoidance, and new climate-related concerns are still to be solved. Luckily, a solid and influential fund, NRRP, is currently running, so hope Italy can overcome some resistance.

3.1. Overview of the four categories in Keynesianism's analysis of aggregate demand or GDP

The aggregate demand formula in Keynesian is the same for calculating nominal GDP. In the formula, Y or AD on the left side is the aggregate demand; on the right side, C stands for the consumption spending, I stands for the investment spending, G stands for the government spending, and net exports are the total exports minus total imports, representing the amount the nation earned from trade.

$$Y = C + I + G + NX \quad (1)$$

This section will analyze the consumption spending, percentage of investment in GDP and net exports.

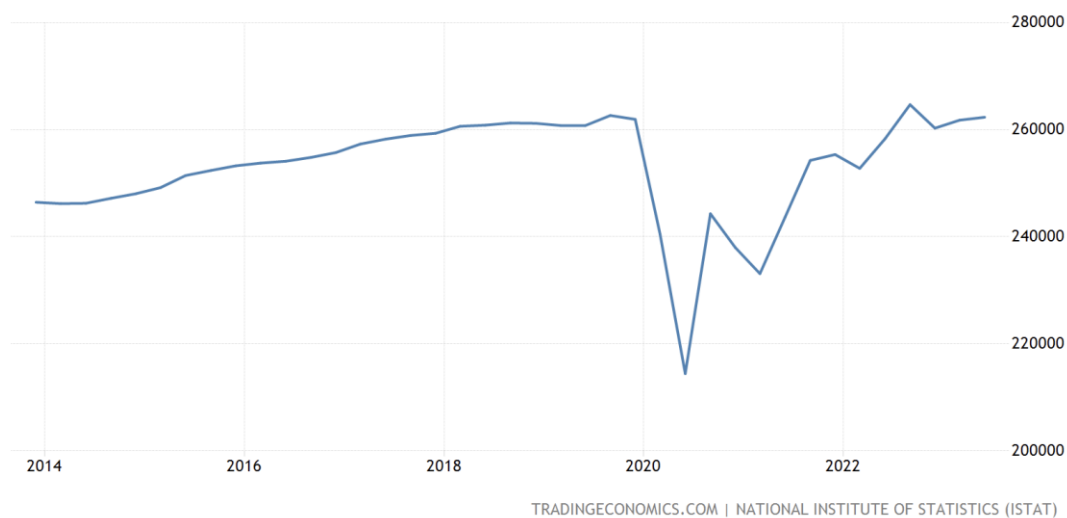


Figure 2: Italy's Consumer Spending in the Nearest Ten Years in EUR Million

Consumer spending is believed to be the most significant portion of the GDP and the focus of Keynesian fiscal policy. According to The Italian National Institute of Statistics (ISTAT) data, consumer spending sharply descended in 2020, which matches the information in Figure 1 and Figure 2. After that, this value fluctuated in an upward trend. This increase means a rise in individual savings, expenditures on investments, and output, as it is the spending of all use of an individual or household. It is attributed to the government's policy and investment plans to support the economy. In the two big waves of the pandemic that happened in 2020, the Italian government responded differently to minimize the restrictions and their impact. Additionally, if a market or industry has a decline in consumer spending, businesses must respond by cutting expenses, decreasing labour costs, or coming up with new, improved products and services. Thus, when discovering rising consumer spending after COVID-19, it is apparent that Italy rebounded and brought this expenditure back to a healthy level (compared to pre-COVID).



Figure 3: Italy's Percentage of Investment in its Nominal GDP in the Nearest Ten Years

Figure 3 of the Percentage of investment in Italy's nominal GDP from CEIC Data. Although no specific data was found, it is known that investment expenditure usually takes up a smaller proportion of the GDP compared to other categories, such as consumption expenditure, and is around 20~25% for most countries [5]. Generally, less developed nations receive more investment than industrialized ones. Given that those nations are industrializing, this is expected, which calls for more significant investment. Thus, seeing a growing proportion of investment in Italy's GDP is not a good sign. This means Italy is now more dependent on investment than before, and it testifies that some of the infrastructure or industries may be underdeveloped, resulting in a soaring increase in investment as investors know they can benefit from investing in those developments. In addition, according to the data from Trading Economics, Foreign Direct Investment did not make any significant growth but stayed at a constant level of fluctuation [6].

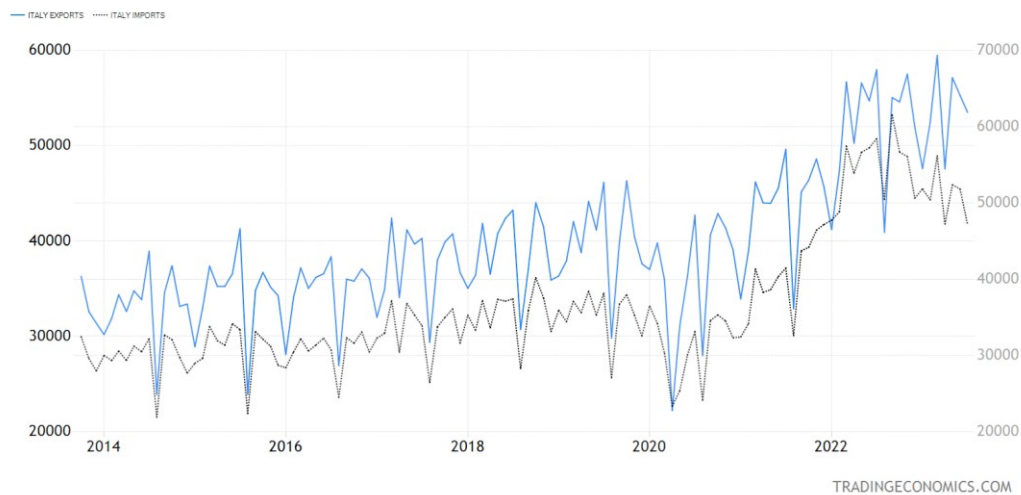


Figure 3: Comparison of Italy's Exports and Imports in the Nearest Ten Years

The net export measures the nation's total trade. A country with buoyant net exports has a trade surplus, whereas a country with negative net exports suffers a trade deficit. In the figure above illustrating a comparison between the lines, each representing export and import in Italy from the data of ISTAT (Figure 4). It is clear that the whole graph is climbing upward, which means Italy was expanding their trading market through its development after the Great Recession in a healthy trend. The total of export and import are also growing, except in 2020 where there was a tumble in both of them. The net export had fluctuated during the year, some of the greater area may be in 2019 and in 2021. This means before the coronavirus had started, the Italian economy was in a healthy development trend. In addition to after COVID, while the globe is in need of resources, Italy rebound enormously with its resources and products such as machinery, pharmaceuticals and vehicles [7].

4. Overview of policies and decisions after COVID-19

Despite the financial initiatives stated above, the Italian government has implemented other steps such as fiscal and monetary policies to boost and assist the economy under the tremendous pressure directly and indirectly brought on by the coronavirus.

4.1. Fiscal Policy

As the first major and most hit Western country to experience the outbreak of COVID-19 in 2020, Italy launched a significant bailout programme. It successfully obtained the greatest proportion of EU recovery money, known as 'Next Generation EU'. [8]. After the amendment in September 2023, the plan was valued at €191.5 billion and is specified to be used in "helping it become more sustainable, resilient and better prepared for the challenges and opportunities offered by the green and digital transitions.[9]" Other than that, industrial policies such as investment incentives were provided and allocated to stimulate the firms. Including the "New Sabatini Law," the "Transition 4.0" plan and the Green Bonus program, more than €20 billion was invested to support SMEs and other areas such as the bank and construction [10].

The European Central Bank considers fiscal discipline "a pivotal element of macroeconomic stability." Thus, Europe's fiscal goal in the Maastricht Treaty involved bringing national debt and deficits down to 60% and 3% of GDP, respectively [11].

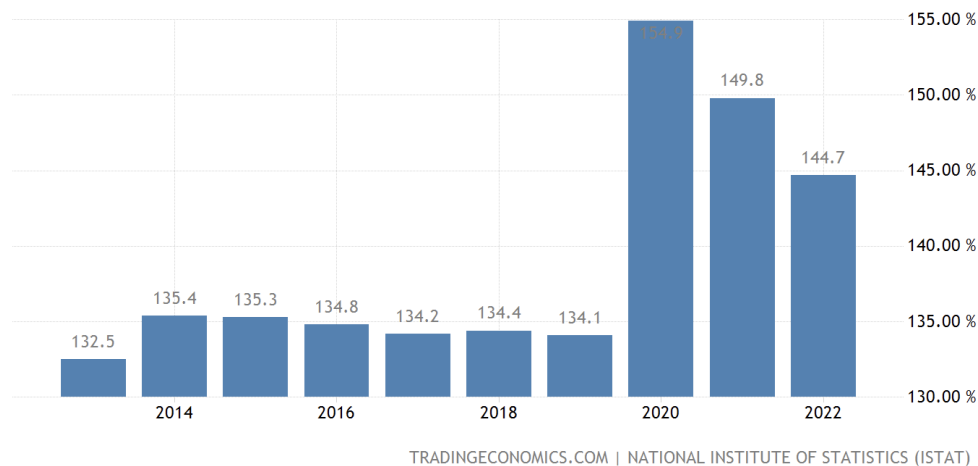


Figure 4: Italy's National Debt Ratio in the Nearest Ten Years

The national debt ratio was almost double the EU's exemption pre-COVID-19, although it was under control (Figure 4). The European Central Bank has raised interest rates multiple times in the past year, raising debt costs and risking default. Thus, limiting government spending threatens borrowers' national credit and solvency. Global financial markets would suffer if the country and eurozone default [12]. Thus, while the debt ratio is decreasing, the economy must be boosted quickly and effectively to prepare for future issues that may again damage it.

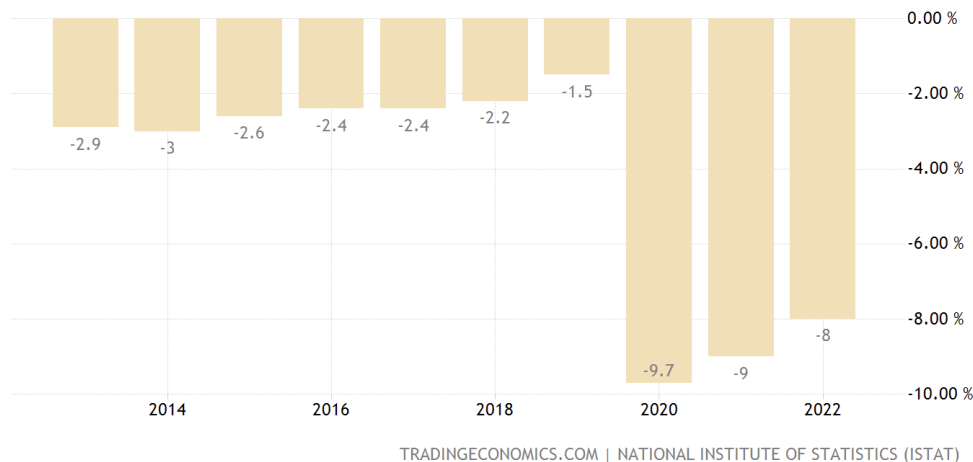


Figure 5: Italy's Government Budget (Deficit) in the Nearest Ten Years

Compared to the national debt, which never achieved the EU's plan. The government budget (deficit) always followed the requirements before COVID-19 happened in the past ten years (Figure 5). However, the drastic plunge in 2020 was apparent, even though the GDP also tumbled. This outcome highlighted Italy's feeble budgetary health because extreme tax break schemes and widespread stimulus were anticipated in fresh revisions [13].

4.2. Monetary Policy

According to the Banca D'Italia, all major economies' monetary authorities have taken unprecedented expansionary steps to ensure market liquidity, support consumer and company credit, and promote demand for products, services, and investment [14]. In addition, the European Central Bank (ECB) decreased the overnight deposit rate by 0.1 percentage points to -0.5% [15], due to the negative

interest rate environment, ECB's limited monetary policy operating space [16] and the minimal effect of continuing interest rate decreases. If interest rates continue to be cut, it could lead to a sharp decline in bank revenues, which would weaken banks' ability to lend.

5. Factors contributing to economic growth and slowdown

External and internal factors influenced Italy's overall economy negatively and positively. This session will examine the impact of the global environment and Italy's domestic environment on its economic standing. Some foreign forces discussed will be the coronavirus and the Russia-Ukraine crisis. At the same time, domestic factors, such as the direct and indirect influence of the virus on Italy and some of its inherent problems, will be analyzed.

5.1. External Factors

Since people found the way coronavirus spread, governments implemented non-pharmaceutical treatments to mitigate the transmission and consequences of the COVID-19 worldwide pandemic. Lockdown regulations and universal movement restrictions have been implemented to combat the epidemic's initial surge. Lockdown measures have demonstrated notable efficacy due to their comprehensive integration of many targeted interventions, two of which merit specific attention in this context: restrictions on large-scale gatherings and limitations on long-distance travel [17]. Indeed, apart from its primary role in mitigating the spread of COVID-19, the restrictions imposed have resulted in a significant economic downturn worldwide, thus becoming a major consequence of the containment measures. As e-commerce experienced significant growth, conventional physical firms faced substantial negative consequences.

The escalation of the conflict in Ukraine and the consequential disruptions to global supply networks caused by the COVID-19 pandemic has resulted in a notable surge in energy prices and a heightened prevalence of scarcities in essential commodities [18]. After Russia cut its gas supply, Italy had to manage its short-term poverty and find new suppliers as it had a high dependence on Russia's natural gas sources [19]. Statista's data displayed that in 2021, Russia was still the leading supplier of Italy's natural gas, with the provision of natural gas amounting to around 14 billion cubic meters per semester. Following the Russian-Ukraine crisis, the volume of Russian imports experienced a decline to 2.2 billion cubic meters to Italy in the year 2023[20]. Consequently, the Italian government was compelled to adopt a proactive approach by significantly augmenting expenditures on stimulus packages and providing help to both people and companies, exacerbating Italy's precarious budgetary condition. Resources like investments in liquefied natural gas infrastructure and making the most of all fossil fuel sources should be used to make up for a drop in the Russian gas supply. Although the debt-to-GDP ratio of the nation had a decline of 5.2 percentage points compared to the previous year, reaching a level of 144.7 percent, it is still above the average debt-to-GDP ratio observed in the Eurozone.

5.2. Internal Factors

Italy has seen significant repercussions as one of the nations most impacted by COVID-19. Compounded by pre-existing economic fragility and reductions in public health services resulting from budgetary constraints over the last decade, the situation has been further exacerbated, intensifying its gravity. The increasing cost of food and energy gradually diminishes households' earnings, negatively influencing spending patterns. This is occurring despite the provision of partial fiscal compensation to offset the increased expenses associated with energy bills and the accumulation of substantial surplus savings during the epidemic [7]. In addition, it is believed that the composition of the Italian GDP reveals that contact-intensive services constitute a comparatively

significant share of the economy compared to other major European nations [21]. The service sector has always been valued more than 60% of the GDP, and the number from 2022 was almost 65% [22-23]. In this particular environment, elucidating the reasons behind the repeated escalation of Italy's pre-existing high unemployment rate and the substantial impact on the Italian economy due to the pandemic is challenging.

6. Conclusion

Overall, Italy seems to be back on track with its economy after COVID-19 in most of its data performance after the rebound in 2021 after being affected by it, while the Italian government had introduced an abundance of policies to support the recovery. However, no strong growth or long-term recovery can be found, and neither reached the European Union's fiscal restraint requirement, while its debt ratio remains high. As economic growth started to slow in 2022, the momentum to end economic stagnation seems to have slowed due to rising energy costs, weak global demand and other factors that will be introduced in the next session.

Keynesian economic theory was employed in this study to examine Italy's economic situation. The selective use of financial aid from the European Union and the efficient use of resources are primarily responsible for Italy's successful recovery from the COVID-19 pandemic. Despite the persistent obstacles associated with implementing the EU budgetary plan, the advent of the virus has presented a chance to facilitate the digital restructuring and transformation of the sector. In order to progress, Italy should enhance its efficiency in solving its inherent issues, especially the massive deficit. Furthermore, boosting the foundational infrastructure might yield advantageous outcomes over time.

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The Impact of Green Trade Barriers on Chinese Tobacco Industry

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Abstract: The tobacco industry is an important pillar of the local economy, but the development and growth also need to bring the spirit of innovation into play, actively go abroad, open up international markets, and increase market share. However, the green trade barriers set by the international tobacco market have restricted Chinese tobacco enterprises from going out. This paper analyzes the importance of tobacco enterprises going worldwide and the advantages and disadvantages of green barriers. The study examines the necessity of green trade barriers from the perspective of world trade status and China's policy trend, and then clearly introduces the definition and manifestation of green trade barriers. The results show that green trade barriers promote the innovation of domestic tobacco technology to a certain extent, but also damage the international competitiveness of China's tobacco industry. This paper puts forward three countermeasures from three aspects. In tobacco cultivation, it is recommended to implement pest control at the start of planting. Enterprises should carry out innovation and reform in production and management processes. On the government side, it is recommended to provide protection and support to the tobacco industry.

Keywords: tobacco, green trade barriers, trade competitive index

1. Introduction

As an important part of international trade, tobacco export has always been attracting much attention. China is the world's largest tobacco producer and exporter, and the scale of its tobacco export is huge. With the economic development of all countries in the world, the scale of international trade is constantly expanding, and environmental problems have become increasingly prominent. The issue of sustainable development has begun to attract widespread attention. In order to protect the environment, some measures taken by various countries directly or indirectly restrict or even prohibit the trade of some products, which have become green trade barriers [1]. However, on a global scale, the increasingly intensified green trade barriers have gradually become a stumbling block. According to a report from the World Trade Organization (WTO), which provides case studies on various green trade barriers implemented internationally, it has provided some references for the environment-related trade barriers that China's tobacco exports may face. Therefore, this paper mainly studies the green trade barriers in the tobacco industry and proposes countermeasures and suggestions.

Green trade barrier refers to the laws, standards, or conventions that restrict trade import and export formulated by a country or region for the sake of human health and safety, so as to achieve the

sustainable development of industry economy and society [2]. Green trade barriers are a series of trade measures designed to restrict or prohibit imports for the purpose of trade protection. This paper refers to the non-tariff technical barrier implemented on the basis of the environmental protection and national health of the importing country. Technical barriers, green tariffs, green quotas, etc. constitute green trade protectionism, of which green technical barriers are the most commonly used one.

In addition, this study aims to achieve good trade relations between countries and promote the development of countries and enterprises. At this stage, in terms of tobacco import and export, tobacco exports are being hit by green trade barriers, which have hit China's international trade to a certain extent.

This paper specifically uses the trade competitive advantage index (TC index) to analyze the competitive advantage of Chinese tobacco in the international market. The study finds that green trade barriers would affect the development of China's tobacco industry to some extent, so this paper suggests that the tobacco industry should make changes in cultivation, business and government, and further, the tobacco industry needs to reform in order to survive.

2. Green Trade Barriers and Tobacco Import and Export

2.1. Tobacco Industry in China

China is the world's largest producer and consumer of tobacco, with more than 300 million smokers, more than 28 percent of adults and more than half of adult men in China regularly smoke [3]. China, with its largest global population and the highest number of smokers, has consequently emerged as a significant tobacco exporter. As a result, the Chinese cigarette market has garnered considerable attention within the international tobacco industry. Due to a variety of reasons, Western tobacco not only has a declining local consumer base and declining consumption but also has a weakening market advantage in countries that export through traditional trade channels, thus forcing Western tobacco monopolies to find new support points for survival and development [4]. Some studies have shown that scholars and public health proponents should move the focus away from narrow economic aspects of liberalization towards specific issues that are more likely to affect tobacco control, such as intellectual property rights protections and investor-state dispute settlement [5].

According to statistics from the National Bureau of Statistics, China's tobacco production totaled 2,188,100 tons in 2022, an increase of 60,500 tons compared with 2021. The output of cigarettes was 2,432.15 billion, an increase of 13.91 billion, up by 0.6% from the previous year. In the same year, the consumption of cigarettes in China was 2,428.07 billion, an increase of 14.221 billion, up by 0.6% from the previous year. In addition, China's tobacco industry exported 12.285 billion cigarettes in 2022, down by 11.3% from the previous year. Figure 1 shows the changes in China's tobacco industry between 2021-2022.

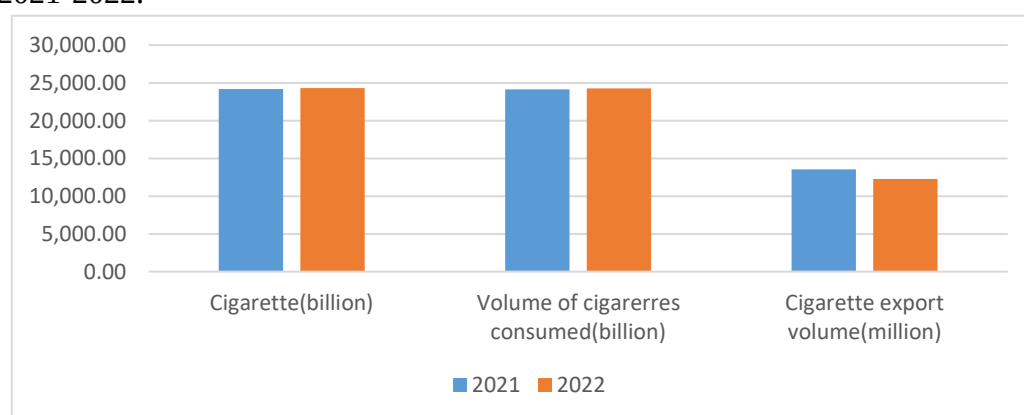


Figure 1: Tobacco industry in China.

2.2. Tobacco Industry Overseas

World tobacco production is sluggish, and total sales are stagnant. This fluctuation in total volume is accompanied by an uneven development of tobacco sales worldwide. Tobacco sales are mainly concentrated in developed countries such as the United States, Canada and Europe, which account for only one-quarter of the world's population but consume more than half of the annual cigarette production every year [6].

In 2022, in addition to Philip Mo International, British American Tobacco, Japan Tobacco, Imperial Brand four major multinational tobacco companies, Korea Tobacco company overseas sales increased against the trend, the United States Altria Group sales continued to decline sharply, India Tobacco Company, Egypt Oriental Company, Vietnam National Tobacco Company and other business performance is good, Indonesia salt warehouse company sales and performance have suffered great setbacks.

In addition, the world's (excluding China) tobacco production overall remained stable with flue-cured tobacco output of 1.742 million tons. Production in Brazil and the US declined, with the overall price of tobacco prices increasing, and the performance of the two major tobacco companies improved.

The Altria Group, an American tobacco company, estimated that cigarette sales in the entire US market fell by about 8.0% in 2022, compared with an average annual decline of 4.5% over the past five years. In the context of the continuous decline of cigarette consumption in the US, cigarette sales continued to decline sharply. In 2020, cigarette sales were 4,477,000 boxes, and in 2022, cigarette sales were 1,694,000 boxes, a decrease of 9.7% compared with 2021. According to the news released by the Altria Group in February 2023, the group's annual sales revenue of tobacco products in 2022 was us \$20.69 billion. None of these figures include taxes.

Sales revenue from tobacco products in South Korea in 2022 was 3,573.8 billion won (\$2.83 billion), up by 14.1% year on year; and tobacco profit was 1,036.43 billion won (\$820 million), an increase of 28.8% year on year. In 2022, the sales grew rapidly in both South Korea and overseas markets, for both combustible cigarettes and heated cigarettes.

Indian tobacco products' sales revenues in 2022 were 234.51 billion Indian rupees (\$3.09 billion), which increased by 15.3% year on year. Figure 2 shows the tobacco market situation of the US, South Korea and India.

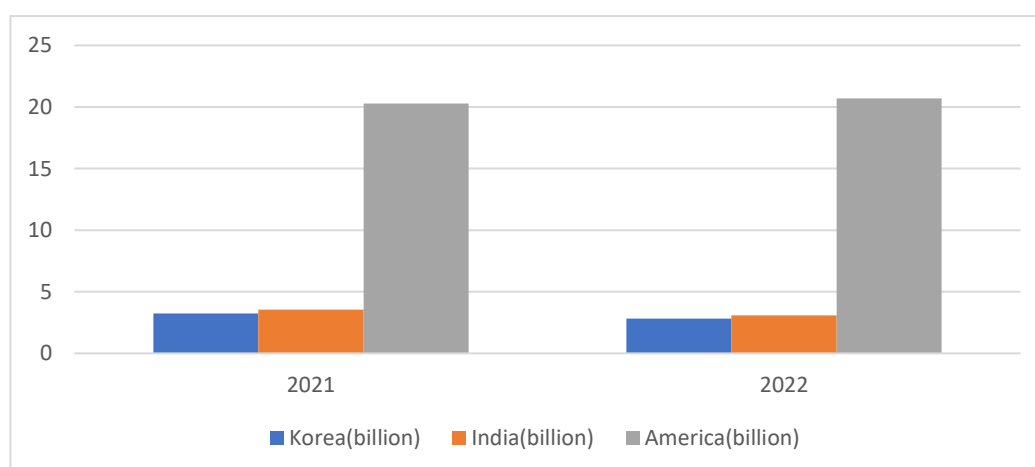


Figure 2: Tobacco industry revenue in the United States, South Korea and India.

2.3. The Impact of Green Trade Barriers

Green trade barriers put forward the use of more environmentally friendly materials and strengthen the protection of the environment. These two requirements have great harm to many industries, such as the energy industry, automobile manufacturing, food industry, etc., and at the same time, also affect the tobacco industry.

The harm of green trade barriers to the tobacco trade is mainly reflected in encouraging people to reduce the demand for tobacco, and there are many restrictions on the export of the tobacco trade. For example, some countries require imported tobacco products to meet environmental protection standards and certification requirements; some countries may impose higher taxes on tobacco, and some countries may restrict the amount of tobacco they import. This has greatly affected the development of the tobacco industry. The development of an industry is hindered, which may stimulate enterprises to take action to reduce costs. It is often in the form of layoffs, and these enterprises could use the cost savings to improve quality. Over time, this would affect the income of a region and some employment problems.

3. International Competitiveness of Chinese Tobacco

The Trade Competitive Advantage Index (TC Index) is often used to analyze the trade competitiveness of different countries. Based on the Chinese sample from February 2020 to September 2023, this paper uses the TC index to calculate the international competitiveness of China's tobacco industry, so as to intuitively show the impact of green trade barriers on China's tobacco industry. The formula for the TC index is expressed as follows.

$$TC = \frac{X_i - M_i}{(X_i + M_i)} \quad (1)$$

In the equation above, X_i is the export value, M_i is the import value, and 'i' is the country (or industry).

If the TC index is greater than zero, means that the industry in the country is in a dominant position in the competition, and the larger the TC value, the more significant the competitive advantage of such industries in the country; conversely, the smaller the TC value, the lower the competitive advantage [7]. The evaluation model of the Trade Competitive Advantage Index is as follows in Table 1.

Table 1: The evaluation model of the Trade Competitive Advantage Index.

Interval	Level of Competitive Advantage
(-1, -0.6)	High
(-0.6, -0.3)	Medium
(-0.3, 0)	Low
(0, 0.3)	Low
(0.3, 0.6)	Medium

According to the data substitution formula, the calculation results are shown in Figure 3, and the chart shows that China's tobacco industry began to develop rapidly in February 2020, and its competitive advantage continued to rise. In 2021, competitive advantage suddenly declined, as governments around the world tightened tobacco regulation. From 8 to 13 November of the same year, World Health Organization (WHO) hold a conference with the countries on the WHO Framework Convention on Tobacco Control, which requires the member countries to enforce tobacco

regulation and impose taxes on tobacco products with the aim of reducing public tobacco use and exposure to tobacco smoke. In other periods, the development of China's tobacco industry was basically stable, and its competitive advantage was basically maintained.

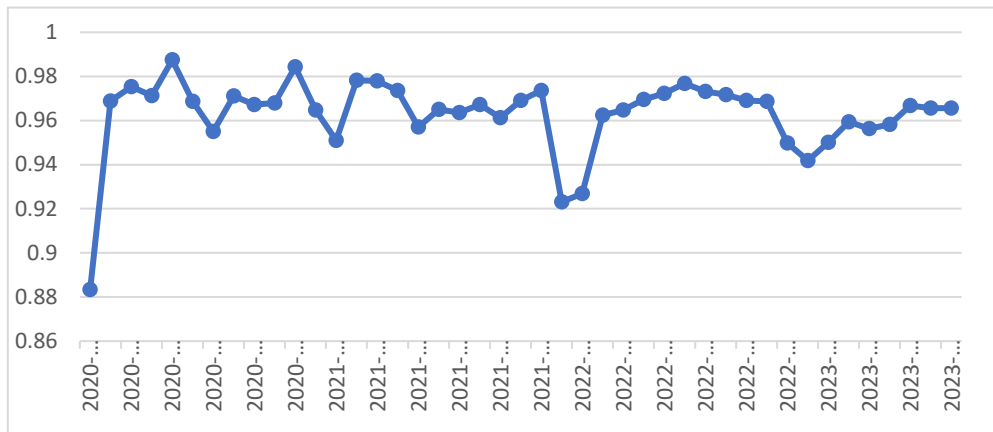


Figure 3: Trend of international competitive advantage of Chinese tobacco.

4. Suggestions

Regarding the problem of improving the tobacco industry in China, many scholars have proposed a large number of methods, such as the sustainable development of China's tobacco industry. Some studies have shown that the sustainable development of China's tobacco industry is facing great challenges. However, there are many opportunities lurking just waiting to be discovered [8].

4.1. Tobacco Cultivation

In terms of tobacco cultivation, tobacco growers need to take some safety measures to control tobacco pests and diseases in order to cultivate good varieties of tobacco. Scientific cultivation of tobacco also needs to pay attention to the difference between the time and amount of medication, and the need to prescribe the right medicine for tobacco, without three drugs [9].

4.2. Enterprise Management

On the enterprise side, strong tobacco brands need to be established, some tobacco companies in China are regulated by the state. In addition to many benefits, there are many strict rules. In a work environment with rewards and punishments, business management becomes easier. Enterprises should pay more attention to these four important steps: product, price, place and promotion.

Enterprises should strengthen the diversification of tobacco products, price flexibility, mastery of channels and brand promotion. In addition, enterprises should also improve the quality and safety inspection and quarantine system of tobacco products, green packaging, green marketing and adhere to technological innovation. What's more, it is necessary to continue to strengthen the relevant training of employees [9].

4.3. Government Support

On the side of the government, the government should call on society to provide impetus for the reform of the tobacco industry. The government can offer information, consultation, and guidance to enterprises for their export initiatives while enhancing the early warning system for green trade barriers affecting tobacco businesses. Government entities can be structured to provide robust support and define development goals for enterprises. Simultaneously, efforts can be made to bolster public

awareness regarding environmental protection. The 13th Five-Year Plan for the tobacco industry published by the Ministry of Industry and Information Technology describes the policies and objectives of the Chinese government in relation to the development of the tobacco industry [10].

5. Conclusion

Green trade barriers have promoted the innovation of domestic tobacco technology to some extent, but they have also damaged the international competitiveness of China's tobacco industry, and in order to change this situation, China's tobacco industry should be changed in farming, business and government.

This article puts forward a few suggestions. First, the government should use the internationally promulgated quality standardization system to improve internal manufacturing conditions, manufacturing facilities, improve its own sanitary conditions, and increase the cultivation of excellent new tobacco varieties. Second, through quality certification, the products are introduced into the international market to meet the quality requirements of consumers in various countries for the tobacco industry. Finally, it is necessary to improve the visibility of tobacco operators and enterprises, maintain and increase market share, and enhance competitiveness in the international market.

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Path of Realization of National Audit to Help the Development of Rural Revitalization Strategy

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Abstract: Effective governance and affluent life. The major development strategy of the party and the state is to achieve rural revitalization, and the state audit plays an important role in the party and the state supervision system, to better implement the rural revitalization strategy, the state audit needs to find the audit focus and put forward specific practice paths, which will help the state audit to play a role in the implementation of the rural revitalization strategy in terms of the relevant policies, information technology, human resources, information platforms and so on, to better and more effectively implementation of rural revitalization policies, and promote the rural revitalization strategy to achieve better results.

Keywords: national audit, rural revitalization development, paths

1. Introduction

Rural revitalization, as an important strategy in the field of "agriculture, rural areas, and farmers", has accelerated the development speed of the construction of the main structure of domestic large circulation. Since the 19th National Congress of the CPC, the CPC and the central government have continuously increased support and financial support for rural governance. However, from the current situation, China's comprehensive ability level for rural governance is still in a weak stage, the implementation of policy dividends is not sufficient, and the effects of funds and projects are difficult to fully reflect. Among them, the lack of effective implementation of a national supervision system is an important reason. However, the Rural Revitalization Promotion Law issued in April 2021 proposes that audit departments at or above the county level should strengthen supervision over the use and performance of rural revitalization funds, which provides a legal guarantee for the implementation and improvement of the rural revitalization supervision system, and provides a fuller opportunity for the national audit supervision system to play, thus helping rural revitalization.

As a supervision and monitoring mechanism, the national audit aims to ensure the correct performance of government public functions and play a key role in the large system of rural revitalization. However, through the analysis of the text of the rural revitalization audit results announcement, it can be seen that since the implementation of relevant policies, the problems found in the audit work have always focused on the three aspects of policy, funding, and project. The specific performance is that there is no accurate implementation of relevant policies for rural revitalization, no standardized management and safe use of funds, and no scientific construction and

efficient operation of relevant projects. The occurrence of this series of problems not only consumes public resources, wastes capital investment but also reduces the implementation effect of rural revitalization policy. To this end, the national audit needs to optimize the implementation method of rural revitalization, give full play to the supervision function of audit work, improve the efficiency of audit work, and then contribute to the improvement and promotion of rural revitalization policies.

Therefore, based on the background of the new era and the key role of national audit in promoting the policy of rural revitalization, this paper analyzes and summarizes the practical experience of national audit in rural revitalization, and further puts forward the realization path of national audit to help rural revitalization, which provides new ideas for rural economic development and has important practical significance and value. The innovation points of this paper are as follows: First, from the perspective of the new era, it explores the internal logical relationship of national audit to help rural revitalization from a theoretical perspective, and deduces that national audit should fully implement its supervisory role in rural revitalization work, contributing new ideas to the macro-governance effect of national audit; Second, combining the new positioning of national audit and taking rural revitalization as the core orientation, this paper deeply studies the practical methods of rural revitalization audit in the new era, and then provides theoretical and methodical references for national audit to promote the development of rural revitalization.

2. Literature review

The role of national audits in promoting rural revitalization strategy has attracted much attention from researchers. In recent years, more and more scholars have studied and discussed the specific methods of national audit in rural revitalization, to play its role in deepening the reform of rural revitalization and promoting the high-quality development of rural construction. Liu Kexin et al. emphasized that national audit provides an important institutional guarantee for the rural revitalization strategy, and on this basis proposed specific ways for the implementation of national audit in the rural revitalization strategy, to give full play to the role of audit [1]. Wang Hong Lan and Wei Jia believe that as an important tool of national governance, a national audit is authoritative and mandatory, and can provide support for rural governance construction, improve the rural governance environment and improve the efficiency of rural management [2]. In addition, the national audit can also be seen as an effective way to extend national policies to the grass-roots level, helping to better implement national laws, regulations, and policies, and comprehensively promote the implementation of the rural revitalization strategy. Zhiying Luo and Huang Xiaofen conducted an in-depth study on the role and path of national audit in the supervision of rural revitalization from the perspective of regional networks [3]. They stressed that in the implementation process of rural revitalization projects and agriculture-related special funds, the national audit should carry out comprehensive inspection and supervision, take targeted measures, use advanced technologies such as big data, give full play to the supervision function of audit, and actively promote the smooth implementation of the rural revitalization strategy. Zhang Wenxiu, on the other hand, believes that a national audit also helps to promote the continuous improvement of various systems and lays the bottom foundation for high-quality rural development [4]. Junliang Chen discussed the logical relationship of how state audit can promote rural revitalization by using the principal-agent theory and the public fiduciary responsibility theory, and combined with the three relationships that state audit should handle well in rural governance, and proposed specific implementation methods of realizing state audit to promote rural revitalization [5]. Zhang Yudong discusses the potential impact of national audits in promoting rural revitalization. He believes that the role of national audit in rural revitalization is mainly reflected in economic responsibility audit, resource and environmental audit, livelihood audit, and poverty alleviation audit. Among them, economic responsibility audit contributes to rural industrial development, resource and environmental audit contributes to ecological and green development,

people's livelihood audit contributes to optimizing the rural public service system, and poverty alleviation audit contributes to poverty alleviation [6]. Li Xiaodong and Ma Yuan believe that contributing to comprehensive rural revitalization aims to engage in the supervision and governance of national audits before, during, and after the event [7]. Liu Weizheng believes that national audit should establish corresponding prevention and coordination mechanisms to help rural revitalization [8].

To sum up, domestic scholars have conducted in-depth research on the role and mechanism of national audits in promoting rural revitalization and put forward many important theoretical and practical suggestions. In the future, with the deepening of the rural revitalization strategy, the national audit will continue to play an important role in this process.

3. Importance of national audits for rural revitalization

3.1. Synergistic Supervision of Economy and Politics

In different historical periods, state audit has played an important role in economic supervision and political supervision. Economic supervision has always been the primary responsibility of state audit, especially in the supervision of financial revenue and expenditure, while political supervision is an important responsibility of internal party supervision, whose core task is to safeguard the party's political discipline and rules, as well as to safeguard the party's political assertions and the operation of power. To ensure the implementation and execution of the policy of rural revitalization strategy and the proper exercise of power, the state audit needs to perform the duty of economic supervision and implement the major decisions of the Party Central Committee. Therefore, state audit supervision needs to combine economic and political supervision, make full use of its function in economic supervision [1], and promote the full implementation of political supervision in the rural revitalization strategy to achieve the goal of a comprehensive audit. The study of a state audit in rural revitalization is very important to improve the political status of state audit institutions and their auditors, and through in-depth study, state audit institutions can better promote the smooth implementation of rural revitalization strategy through the use of political supervision. State auditing in rural revitalization needs to take into account the responsibilities of economic and political supervision, to achieve the goal of comprehensive auditing by playing the function of economic supervision promoting the full implementation of political supervision, and enhancing the status of the State auditing institutions and form a synergistic supervision is of great significance to provide a better leading role for rural revitalization.

3.2. Scientific and reasonable audit focus

In 2021, the Opinions of the State Council of the Central Committee of the Communist Party of China on Comprehensively Promoting Rural Revitalization and Accelerating Modernization of Agriculture and Rural Areas was released, providing a clear direction for the work of the "Three Rural Areas". In the same year, the adoption and implementation of the Law of the People's Republic of China on the Promotion of Rural Revitalization laid a solid foundation for the rural revitalization strategy to be elevated to the legal level, forming a professional and legalized development strategy, and escorting the comprehensive implementation of the rural revitalization strategy through the law [9]. The Rural Revitalization Strategy is an important development direction for the country, but there are some problems in its implementation, such as lack of implementation, ineffective use of funds, and unreasonable project management. To solve these problems, the National Audit Office has taken a series of measures, including highlighting the audit focus, ensuring the rational allocation and use of resources through focused audits of the use of funds for projects related to rural revitalization, etc.; increasing the disclosure of audit results, making audit results available to the public promptly to

improve transparency and credibility; improving the timeliness of announcement disclosure, and guiding various parties through the timely issuance of audit announcements to rectify problems promptly and promote their resolution; and carry out whole-process audits to audit and supervise the entire process of implementing the rural revitalization strategy to ensure compliance and effectiveness in all aspects. These measures have promoted the rational implementation of the rural revitalization strategy by revealing existing problems, especially irregular decision-making, losses and wastage, and slow and chaotic action, through in-depth investigation and verification of information. This not only promotes the development of China's countryside to a higher level, but also enables the State Audit Institution to better fulfill its role of audit prevention and supervision, and allows auditors to scientifically and reasonably determine the scope of the audit and the focus of the audit at different stages of the actual audit work.

3.3. Tapping into innovative audit work methods

The implementation of the rural revitalization strategy is an important direction for China's rural development and is also one of the key areas of national audit supervision. However, due to the wide range of rural revitalization, the many departments involved, and the high cross-section of relevant professional knowledge and disciplines, the national audit of rural revitalization has become cumbersome and complex. Among them, there are some problems in the traditional agricultural audit, such as unclear responsibilities, immature ideas, and non-updated technology, etc. Therefore, it is crucial to research rural revitalization state audits to further optimize the audit work and explore innovative ideas. To carry out the national audit of rural revitalization, we can innovate the working method, take the funds as the guide, and carry out the whole process of penetrating the audit from the aspects of project decision-making, project approval, bidding, and tendering, contract management, investment control, construction progress, use of funds, operation and maintenance, and performance evaluation. Through the research concept of penetrating the whole process of auditing all aspects of the audit work, around the flow of funds, to achieve the goal of investigation to the end, but need to focus on strengthening the project decision-making, project approval, and other aspects of the audit supervision, to ensure that the project's reasonableness and feasibility. And audit the bidding and tendering process to prevent irregular operation and waste of funds. This will enhance the supervisory and preventive role of the state audit organs in rural revitalization work, and build a new pattern for rural revitalization state audit work.

4. Path of realization of national audit to help the development of rural revitalization strategy

4.1. Institutionalization of relevant policies

Promoting the development of the rural revitalization strategy aims to implement, sound, and optimize the institutional mechanism of relevant policies on national auditing. In the notice of the "14th Five-Year Plan for the Development of State Audit Work" issued in 2021, "to improve the mechanism for the implementation of the Party Central Committee's major decisions and deployments on audit work, and the mechanism for joint audit work between the military and the local government; and to improve the system of the audit committees of the Party committees at all levels for requesting instructions and reports on major matters in the field of auditing, to form an audit work nationwide." The strategic goal is an important foundation for accelerating the soundness of national audit-related policies and institutions and ensuring the smooth conduct of audits. At present, China's provinces and villages in geography, economy, and other conditions are different, and to fundamentally help the development of a rural revitalization strategy through the local government to establish a rural revitalization audit team to be examined and investigated, and feedback to the

relevant departments, fundamentally reduce the difficulty of the soundness of the national audit-related policies and institutional mechanisms. In response to the existing problems of the institutional mechanism for rural revitalization, the core idea of the auditing institutions should accurately grasp the contradictions between the enemy and us in the process of agricultural and rural development, and discuss the relevant problems with the relevant departments, and study and discuss corrective solutions together, to fundamentally accelerate the level of rural governance.

4.2. Innovative extension of information technology

With an in-depth understanding of the rural revitalization strategy, national audits need to collect and process data on the implementation of several policies benefiting agriculture. In terms of the financial input, policy measures, and mechanism operation involved in rural revitalization, government auditing can adopt innovative network auditing techniques, take advantage of big data, and use networked auditing systems to review the account management of audited units. Firstly, the application of new-generation information technology in auditing, such as big data auditing and cloud computing, is being promoted to solve problems such as the shortage of human resources in rural areas and improve the effectiveness of auditing work [1]. In addition, the "Golden Audit System" under construction will be a powerful technical support for State audits to promote rural revitalization. Secondly, when obtaining relevant data, the State can make use of information technology to realize the traceability, statistics, and sharing of audit information, to improve the quality of audit work. Finally, in the era of big data, State auditing institutions should promptly adapt to the development trend of information technology and networking, cultivate the adaptability of their auditors, move the audit gate forward, and shift from ex-ante prevention to ex-post supervision to stop risks promptly.

4.3. Openness of the process of the information platform

Improve the national audit announcement system, motivate the people to participate in supervision, and achieve effective prevention and correction of errors in the audit results. Improving the transparency of government power cannot be separated from publicizing the results of state audits. Firstly, improve the national audit announcement system, make the audit results public as much as possible under the principle of confidentiality, ensure the accuracy and timeliness of information, and enhance the credibility of the national audit. Second, establish a special public announcement platform for state audits of rural revitalization, and make the announcement and public system of state audits of rural revitalization process oriented through information technology, to facilitate the operation and the public's access to information. The audit results should cover the evaluation of leading cadres, the evaluation of project implementation entities, and the allocation of competitive resources so that the audit can promote rectification, reform, and development.

5. Conclusion

In 2020, China completed the task of poverty eradication and solved the problem of overall regional poverty, but it should also be recognized that the cause of poverty alleviation and reduction still has a long way to go and that there are still problems that restrict the implementation and development of rural revitalization policies, such as the imbalance between urban and rural development, and the insufficiency of rural development, and so on. At the Fifth Plenary Session of the 19th CPC Central Committee, "consolidating and expanding the results of poverty alleviation, and comprehensively advancing the strategy of rural revitalization" formally became an important task for economic and social development in the period of the 14th Five-Year Plan [1]. Therefore, to better consolidate the existing results of poverty alleviation, ensure the smooth implementation of rural revitalization, and

thus improve the quality and level of agricultural and rural development, it is necessary to further bring into play the positive impact of the national audit function on rural revitalization.

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Applicability Analysis of Arbitrage Pricing Model in Chinese Stock Market

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Abstract: This paper presents the fundamentals and benefits of the arbitrage pricing model, emphasizing the significance of utilizing arbitrage pricing theory to the growth of the stock market. Firstly, the thesis analyzes and summarizes the mature research on the arbitrage pricing model abroad. This paper, taking into account the unique circumstances of the Chinese stock market, summarizes and contemplates the empirical examination of the arbitrage pricing model's applicability in the Chinese stock market. Most research lines in the Chinese market have been found to be in agreement with the arbitrage pricing principle, yet some studies have come to the contrary result. The fundamental reason is that the analysis of the model needs to be further improved, and China's stock market needs to be developed. Proposals to foster the growth of China's stock market are finally put forth.

Keywords: Arbitrage pricing model, China's stock market, Empirical analysis

1. Introduction

Arbitrage pricing model, China's stock market, Empirical analysisIn recent years, the development of China's research on financial asset pricing theory has also experienced a process of gradual deepening from scratch. At the same time, its research scope is no longer limited to the academic field, but gradually enters the market field to guide investment practice. The capital asset pricing model remains the foundation for the current popular textbooks' introduction of asset pricing theory, while arbitrage pricing theory is overly broad. Nevertheless, with the swift expansion of China's economy, securities investors have a more comprehensive comprehension of "standardized trading and rational investment", prompting them to search for effective asset pricing models to implement in order to acquire superior returns. Therefore, arbitrage pricing theory has been paid more and more attention. In this new situation, due to the particularity of China's securities market, whether the arbitrage pricing model established based on Western developed markets is effective for China's securities market will become an important issue, especially on this basis to study the rationality of stock pricing, yield factors, and other issues will play a positive role.

2. The definition of the asset pricing model

In 1976, Ross put forward the concept of arbitrage pricing (APT). This hypothesis postulates that the return rate of various securities is influenced by one or more elements, and that these factors are connected since they all react to them. Unlike the capital asset pricing model based on mean variance, the arbitrage pricing model is founded on the one-price theorem. Fewer assumptions are present, such

as no single investment period, no tax issue, investors can borrow and lend money at risk-free rates, and portfolios are selected based on the mean and variance of returns. This makes it more advantageous as a financial market analysis tool to help understand arbitrage opportunities and pricing differences in capital markets.

Based on the pertinent data for the United States from 1958 to 1984, Nai-FuNai-Fu Chen, Richard Roll, and Stephen Ross developed an effective CRR model and noted that the return of American securities was primarily influenced by five macroeconomic factors: First, the impact of a sudden shift in the rate of inflation on the returns on securities is examined [1]. Second, we gauge the spread determinants that influence security returns by contrasting the trend of unexpected spreads between senior and junior bonds. Thirdly, it looks at how unanticipated changes in industry production affect returns on securities. Fourthly, it examines how unexpected long-term bonds and short-term bonds' price differences affect both the long-term and short-term returns on securities. Fifth, the impact of outside variables is assessed, including changes in the unexpected inflation rate.

Antje Berndt and Lulian Obreja studied the asset pricing theory based on the European securities market and proved that systemic risk is not the only source of the volatility of securities returns [2]. The common factors (CMF) including length of term, credit rating, etc. are found out, and regression analysis is carried out on these factors based on the pricing model of ICAPM and KTV. Conclusion: In the European securities market, systemic risk can explain 21% of asset returns, and common factors can explain.63%, leaving the remaining 16% unexplained.

The research on the arbitrage pricing model in foreign countries started earlier and is more mature. However, in contrast, in the early 1990s, China's securities market had just begun to improve, and there were few studies on arbitrage pricing theory. Considering the special situation of China's stock market, the applicability of the arbitrage pricing model in China's stock market remains to be verified.

3. Summary of relevant studies

3.1. Study on the number of common factors

Wu Bao et al., in the book *Research on Financial Engineering*, briefly introduced the estimation method of the number of factors affecting the return rate of Chinese stocks but did not test the arbitrage pricing theory [3]. They only take 30 stocks included in the SSE 30 Index as samples and use the maximum likelihood method to do factor analysis and find that there are only 6 factors affecting the return rate of Chinese stocks. However, because there are too few observation points in the time series, and the Shanghai Composite Index itself lacks sufficient representatives, the stocks selected for this component index are mostly large-cap stocks with good performance, while small-cap stocks, junk stocks, and other stocks are excluded, the credibility of the research results is limited, and the number of factors affecting stock returns is likely to be underestimated

Zhang Yan's empirical examination of the Shanghai stock market demonstrated that, despite the presence of multiple common factors, the single-factor model still has a powerful explanatory power, thus its research value cannot be denied [4]. The group above 86.7% has at least one significant risk premium factor, the group above 53.3% has at least two significant risk premium factors, and only a few groups have at least three significant risk premium factors when the risk-free rate of return is assumed to be 3.5% using the daily rate of return data. The evidence suggests that security yields are influenced by at least two, and maybe three, common elements. It demonstrates that the Chinese stock market may benefit from the three-factor approach. The existence of the third risk premium component cannot be fully established at the same time. Along with the model's inherent issues, this illustrates how China's stock market has developed rapidly and lacks a consistent framework, making it difficult to identify all of the elements that influence it. Additionally, the model's autovariance test

is simply a weak test, therefore the outcome is unsatisfactory. This raises additional questions regarding the arbitrage pricing model's applicability in China.

Then, Sun Junmin et al. used factor analysis to screen 11 factors and discovered four pieces of data that reflected the overall economic level of the nation, the inflation rate, the growth rate of fixed asset investment across society, and the current state of interest rates, which could very well reflect all factors [5]. In an empirical test to determine whether the capital asset pricing of Shanghai B shares complies with the arbitrage price model, Yin Kang applied modern securities portfolio theory and discovered that the cumulative contribution rate of variance of the nine factors reached 85.7%, meaning that these nine factors could account for nearly 86% of the factors affecting the stock market [6].

By using the daily yield data from the Shanghai A-share market, Chen Renke evaluated the arbitrage pricing model and continued his investigation on the prohibition of short selling in Chinese stock market trading [7]. First, the number of factors is determined using principal component factor analysis and maximum likelihood factor analysis, respectively, and then the estimated factors are subjected to a significance test. The inference is made that, in some instances, the arbitrage pricing theory holds true for the Chinese stock market. In addition, it is discovered that the significance level and data type have a significant impact on the factor analysis results and that the model's stability is low. The hope of improving the stability of the model is put forward. Scholars generally believe that the arbitrage pricing model is still applicable in China's stock market, but China's stock market system is not perfect.

3.2. Research on influencing factors

Scholars must delve into the particular elements that influence the stock market, in addition to the numerous shared ones. Tian Dawei took the BIRR model in arbitrage pricing theory as a reference and selected 33 macroeconomic factors, the Shanghai Composite Index, and 10 randomly selected stocks as research objects [8]. First, he preliminarily screened macro factors by combining stepwise regression and robust regression. The vector autoregressive model is then employed to select four macro risk factors for the macro factor arbitrage pricing model pertinent to China's stock market: total energy production, foreign direct investment, the seven-day interbank offered rate (monthly average) and the national consumer price index.

Zhang Wei identified the macroeconomic parameters of the arbitrage pricing model based on the Chinese market in the empirical research of A-shares [9]. The five main elements are, in order, general economic development, inflation, the state of both domestic and international business activity, overall economic expansion, and future economic growth optimism. This model's suitability for the Chinese A-share market as well as the impact of industry and business size on the market's return on investment are confirmed.

3.3. Studies of questionable applicability

While most scholars have concluded that arbitrage pricing model is suitable for the Chinese stock market, many scholars have also concluded that it is not suitable for the Chinese stock market, which provides us with more thoughts on improving the model and factor stability. In order to evaluate the Arbitrage Pricing Model of the Chinese Stock Market, Liu Lin and Qin Wanshun conducted a factor analysis on the stock prices of Shanghai and Shenzhen [10]. They found that nine factors significantly affect the return rate of Chinese stocks, compared to the number of factors in the American stock market. The arbitrage pricing model failed the test of applicability to the Chinese stock market, which led to this result. However, there are other issues with the conclusion: Brown and Weinstein confirmed that as the number of components chosen rises [11], the likelihood that the consistency

hypothesis would be rejected during the inter-group return generation process will likewise rise. If the notion of uniformity in yield generation among groups is often denied, it is inappropriate to characterize the yield generation process with this amount of factors, thus rendering the arbitrage pricing model of the corresponding figure futile. They believe that this is probably because China's stock market has not met the requirements of full competition, and there may be arbitrage opportunities in the market, that is, China's stock market is still in the development stage of "emerging and transforming", and many systems and regulations need to be improved and supplemented. The panel data of Shenzhen A-share companies from 1999 to 2003 was used by Cao Hongying and Yang Yuxiang to empirically test the Arbitrage Pricing Model in the Chinese Securities Market [12]. They found that the correlation between market capitalization, price-earnings ratio, company size, and book value and China's stock return rate was not statistically significant. Arbitrage pricing theory is shown to be inapplicable to the current Chinese securities market after comprehensive investigation. She believes this is due to the short duration of the market's development, the vast disparity between China and developed countries in terms of market regulation, the caliber of listed companies, securities laws and regulations, and other facets, as well as the lack of resource allocation.

3.4. Study on the effectiveness of APT model

Although the APT model had several limitations, Reinganum used the stock data shared by the New York Stock Exchange and the American Stock Exchange from 1962 to 1973 to demonstrate that there was a negative correlation between business size and the daily excess return of shares. Using data from 486 listed businesses from the Shanghai stock market as a sample, Yang Hu et al. performed a study to assess the effectiveness of the arbitrage pricing model in China's securities market [13]. The study's findings show that the arbitrage pricing model cannot be used to analyze the Shanghai stock market. Using a set of variables, a statistical analysis and empirical test of China's Shanghai and Shenzhen stock markets, the determination of the number of factors in the arbitrage pricing model, and the establishment of the model, was conducted by, demonstrating that the Chinese stock market is an efficient market and adheres to the arbitrage pricing model [14]. Zhang Baochun believes that due to the unsatisfactory conditions of APT itself and the immaturity of China's securities market at this stage, the application of mainstream Western capital pricing models in China is limited [15].

3.5. Research on APT model revision

The applicability of the arbitrage pricing model in China is limited and affected by various factors. Researchers improve the applicability of the model to a certain extent through the following two aspects

In his empirical test of the Shenzhen stock market, Li Jiaorui considered two significant changes in the trading system during the development of China's stock market: one is the change from the T+0 trading rule to the T+1 trading rule [16]; The second is the implementation of the system of rising and falling limits. Dummy variables are introduced to improve the arbitrage pricing model. The results show that the non-systemic risk of the stock market has a great impact on the stock price, investor confidence, and investment decision, and the model after the introduction of dummy variables is closer to the reality than the model before the introduction, which also indicates that China's Shenzhen stock market conforms to the arbitrage pricing model.

Considering the low quality of the data itself, Zhang Wei built a model according to the industry and scale, used macro factors to explain and forecast nine basic factors, and then used the predicted value of basic factors to further generate views on individual stocks or industries [9].

4. Conclusion

Through the literature review on the applicability of the arbitrage pricing model in the Chinese market, we know that the current research mainly focuses on the establishment and application of the arbitrage pricing model, and has made some progress. However, we also find that the existing arbitrage pricing model has some problems and limitations in the practical application of the Chinese market. The influence of existing factors on the return rate of Chinese stocks is not significant and unstable, and further research is needed. In addition, although the arbitrage pricing model based on factor analysis has achieved some results in the research of the Chinese market, there is still room for improvement to improve the accuracy and stability of the model. To sum up, the applicability of the arbitrage pricing model in the Chinese market is still an important topic, and it is necessary to further explore the arbitrage pricing model applicable to the Chinese market and improve the existing model to improve its forecasting ability. In future research practice, we can further explore the applicability of the arbitrage pricing model in different market environments and put forward corresponding improvement methods. Such research is of great significance not only for improving the decision-making ability of investors but also for effectively promoting the stable development of China's securities market.

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Valuation Analysis of Chinese Game Enterprises Based on Improved DEVA Model: Taking Panax Notoginseng Mutual Entertainment as an Example

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Abstract: With the rapid development of the Chinese gaming market, valuation analysis of gaming companies has become a focus of attention for investors and the industry. This study takes Seven Seas Interactive Entertainment as an example and conducts valuation analysis of Chinese gaming companies based on the improved DEVA model. First, the research background and objectives are introduced, emphasizing the importance and innovation of the study. Secondly, the basic principles and limitations of the DEVA model are briefly introduced, and a method for constructing the improved DEVA model is proposed. Then, an overview of the development status and characteristics of Chinese gaming companies, as well as the development overview of Seven Seas Interactive Entertainment, is outlined. Subsequently, by analyzing the financial data of Seven Seas Interactive Entertainment, the parameters of the improved DEVA model are set and valuation calculations are carried out. The results of the valuation are analyzed and compared with the traditional DEVA model through empirical testing. Finally, the main achievements of the study are summarized, and future research directions are discussed. This study expands the methods and research perspectives for valuing Chinese gaming companies, providing reference basis for investment decision-making.

Keywords: DEVA Model, Chinese Gaming Companies, Valuation Analysis

1. Introduction

In recent years, China's game industry has become one of the world's largest markets. With the continuous progress of Internet technology and the changing needs of users, the valuation analysis of game enterprises has become particularly important. However, there are still relatively few valuation studies on Chinese game companies, and the existing valuation models have some limitations in applicability and accuracy. In order to solve this problem, this study selected the Chinese game enterprise Sanqi mutual Entertainment Network Technology Group Co., Ltd. as a case, through the in-depth study of the company's business model and competitive advantage, aiming to build an improved DEVA model suitable for Chinese game enterprises, and apply it to the company's valuation analysis.

In terms of research methods, this paper will introduce the principle and calculation method of DEVA model. DEVA model mainly includes market value, enterprise scale, revenue growth rate,

profitability and other indicators. By calculating the weighted average value of these indicators, the enterprise valuation is obtained. Referring to the existing DEVA model, and combining the core value factors and value characteristics of Internet enterprises, it is improved and revised. By comparing and analyzing the valuation results and market value of Panax notoginseng mutual entertainment, this paper verifies the practical significance and accuracy of the improved DEVA model for the valuation of game enterprises.

The significance of this study is to provide some reference for the valuation analysis of Chinese game enterprises. By constructing the improved DEVA model, this paper can more accurately evaluate the value of game enterprises, and provide scientific decision-making basis for investors and decision-makers. In short, this study will build an improved DEVA model through the case study of Panax notoginseng mutual entertainment, and verify its applicability and practical significance in the valuation of Chinese game enterprises. This study will provide a useful reference for the valuation analysis of Chinese game enterprises and promote the development and innovation of the game industry.

2. Literature Review

First of all, in the domestic research, most scholars have analyzed and commented on the theoretical framework of valuation methods of listed game companies. From different perspectives, they discussed the application of this method in risk assessment and product cycle research, and also put forward some suggestions for improvement and optimization. For example, through the case analysis method, the combination of qualitative and quantitative methods and the comparative analysis method, evaluates the Internet game enterprises, and points out that if only the free cash flow discount method is used to evaluate the enterprise value of the perfect world, the value will be underestimated [1]. This paper puts forward a new idea for the valuation method - using the real option method to evaluate the potential value of the perfect world, which provides ideas for valuation research.

Secondly, some researchers also verify the accuracy and stability of the improved valuation methods for listed companies in the game industry through case studies and empirical analysis. They selected some representative enterprises or projects for research, and conducted detailed data analysis and model building. For example, some scholars analyze the unavailability of traditional valuation models [2]. Then it studies the value characteristics of Internet enterprises and explores the core influencing factors of Internet enterprise value. Combined with the core influencing factors of Internet enterprise value - user resources and industry status, this paper introduces the DEVA model which came into being in the Internet wave. First, it shows that reasonable evaluation methods are increasingly important for the value evaluation of Internet enterprises. Second, it is also evaluated based on the DEVA model, and the deviation rate of the evaluation results is no more than 2%, which effectively verifies the effectiveness of the improved DEVA model, and has reference value for the objective, effective and accurate evaluation of the value of Internet enterprises.

In addition, some foreign scholars have discussed the valuation methods from the perspective of market development and put forward some strategic suggestions for the development of enterprises [3]. For example, the analysis of enterprise value in "lessons smoothness, average returns, and implied cost of equity capital" puts forward three different levels of analysis, which provides a reference for the selection of parameters in this paper, and puts forward suggestions and requirements for the accuracy of investment valuation and enterprises' attention to business reputation, indicating the importance of more reasonable valuation methods for guiding investment.

To sum up, the research on valuation methods of listed game companies by researchers at home and abroad shows diversity and universality. They discussed the application and optimization direction of this method in the Chinese market from the perspective of theoretical analysis, empirical research and market development. These research results provide important reference and guidance

for the in-depth study on improving the valuation methods of China's Unlisted game companies, taking MIHA game company as an example. However, further research and practice are also needed to further improve and optimize the application effect of this method.

3. Methodology

DEVA valuation model is based on user value theory. Users are the core factor of game enterprise value, so it is more suitable for the valuation of game companies.

The formula is as follows:

$$V_e = M * C^2 \quad (1)$$

The valuation role of DEVA model in the Internet industry has been proved, but it also has defects. The uncertainty of the game market and the increasing competition still pose certain risks to the accuracy of market share prediction. Relevant parameters need to be carefully selected and comprehensively analyzed in combination with other methods and indicators.

The DEVA model relies on past user data in the valuation process. As a result, historical data may not accurately reflect the current valuation of the enterprise. At the same time, the DEVA model takes less consideration of non-financial factors. In the valuation of game enterprises, in addition to financial indicators, there are also many non-financial factors that affect the value of enterprises, such as technological innovation ability. The DEVA model does not fully consider these non-financial factors, which may lead to the inaccuracy of enterprise valuation [4]. It is necessary to modify the DEVA model and introduce appropriate non-financial factors. These limitations should be fully recognized and considered to improve the accuracy and scientificity of the valuation results.

In view of the limitations of the above-mentioned DEVA model, this paper proposes an improved construction method of DEVA model:

(1) Initial invested capital of unit M

Take the registered capital of the company as the initial invested capital and the cumulative number of users when the company is listed as the base, that is, $m = \text{registered capital of the company} / \text{cumulative number of users}$.

(2) Introduction of market share

The game industry is very similar to Internet enterprises, both of which are oriented by products and target users, and have a strong Matthew effect [5]. China's game industry has a high degree of capital concentration, with Cr4 generally above 85% in recent years [6]. Based on this special industry factor, this paper adds the variable of market share in the process of value evaluation. In the formula, P represents the market share, and the formula is:

$$V_e = M * P * C^2 \quad (2)$$

(3) Measuring and correcting user value

The original DEVA model did not effectively define the user value. The main way for Chinese game companies to make profits is to pay for services in free game products, and only some active players are the main consumer groups. The average monthly active user (MAU) is introduced to determine the number of core users of the company, and the user value is measured by the average revenue per user (ARPU). The calculation method of ARPU is:

$\text{ARPU} = \text{total revenue per unit time} / \text{number of target users per unit time}$;

Then this paper introduces the unit customer acquisition cost (CAC) to obtain more accurate user value by subtracting the additional cost brought by acquiring users. CAC is calculated as follows:

$\text{CAC} = \text{sales expense} / \text{number of new users}$;

Then the formula becomes:

$$Ve = M * P * [MAU * (ARPU - CAC)]^2 \quad (3)$$

(4) Add proportion of scientific research investment

Game companies are still product-oriented. Game products are directly related to R&D investment. The proportion of R&D investment of enterprises (I) is added to the model as an important indicator of the competitiveness of game products of the company and an indicator of the ability of enterprises to attract users.

The final model formula is:

$$Ve = M * P^2 * (1+I) * [MAU * (ARPU - CAC)]^2 \quad (4)$$

4. Empirical Results based on Panax Notoginseng Mutual Entertainment

Panax notoginseng mutual entertainment is a highly concerned enterprise in China's game industry. It was founded in 1995 and listed in 2011. Since its establishment, Panax notoginseng mutual entertainment has achieved rapid and stable development with its unique strategic planning and innovation ability. In the past few years, Panax notoginseng interactive entertainment has not only occupied a place in the domestic market, but also actively explored overseas markets and become a leader in Chinese game enterprises.

Panax notoginseng mutual entertainment focuses on independent R&D and innovation. Since its establishment, the company has been committed to independently developing high-quality game products without relying on external authorization to ensure the stability and controllability of game quality. Panax notoginseng entertainment also attaches great importance to product innovation and often introduces new playing methods and game mechanisms to meet the changing needs of players. This ability of independent R&D and innovation makes Sanqi mutual entertainment stand out in the highly competitive game industry.

Sanqi mutual entertainment has rich experience in game development and operation. Through years of accumulation, Panax notoginseng entertainment has established an efficient and professional R&D team with rich experience in game development and technical strength. The company also pays attention to game operation, combines R&D with operation, and continuously optimizes the user experience and profit effect of the game through accurate data analysis and market insight. This dual advantage of R&D and operation provides a strong support for the development of Panax notoginseng mutual entertainment.

Sanqi mutual entertainment also actively carries out the internationalization strategy and expands the overseas market. The company has arranged overseas markets in advance, not only promoting game products to overseas markets, but also actively seeking international partners to achieve transnational cooperation. Through open cooperation and resource integration, Panax notoginseng mutual entertainment has made remarkable achievements in the overseas market, further consolidating its position in the game industry.

In summary, as one of the representatives of Chinese game enterprises, Panax notoginseng mutual entertainment has made remarkable achievements in China's game industry by virtue of its independent R&D and innovation capabilities, rich R&D and operation experience, and actively carried out internationalization strategy. In the future, it has reason to believe that Panax notoginseng mutual entertainment will continue to uphold the spirit of innovation, continue to introduce more high-quality game products, and make greater contributions to the development of China's game industry.

The improved model takes the user value as the core to estimate the enterprise value, but there are differences between different enterprises in many aspects. In particular, the traditional enterprises generally calculate the enterprise value based on the financial data. Not all enterprises are guided by users and products to bring benefits to enterprises, so the user value also has its scope of application.

First of all, it is applicable to the game industry and game enterprises. A large number of game companies are generally asset light enterprises, and it is difficult to effectively estimate the value of enterprises using these financial data. The improved model is based on the characteristics of the game industry, adding parameters such as market share and customer acquisition cost, which is suitable for game enterprises and has certain application value. At the same time, DEVA model itself evaluates the value of game enterprises from the user value and combined with the initial cost, which has few parameters and is easy to use. However, its deficiency is that the definition of the relationship between users and enterprise value is unreasonable, and the parameters are too simple, which will make the valuation results unstable. Secondly, the improved model requires game companies to have a certain market share. The original model is more suitable for start-up enterprises. All user base water can bring value to enterprises, but for most game enterprises, this theory is obviously not suitable for the actual situation. In a word, in the game industry where Matthew effect is constantly strengthening, for the improved DEVA model adopted in this paper, enterprises need to have a certain market share in order to get a more reasonable enterprise valuation.

In this section, this paper will calculate the valuation of Panax notoginseng mutual entertainment by improving the DEVA model, and evaluate the value of the company by combining financial data and market information (see Table 1). Based on the improved DEVA model, this paper sets the parameters for the specific situation of Panax notoginseng mutual entertainment to ensure that the calculation results are more accurate and reliable (see Table 2).

Table 1: Various financial data of Panax notoginseng Entertainment.

Time	2019	2020	2021	2022
Total operating income (RMB 100 million)	132.27	144	162.16	164.06
Total operating cost (RMB 100 million)	105.87	114.69	132.87	131.7
Sales expenses (RMB 100 million)	77.37	82.13	91.25	87.33
R&D expenses(RMB 100 million)	8.2	11.13	12.5	9.05
MAU(100 million people)	0.34	0.64	0.55	0.43
New registered user (100 million people)	2.66	3.84	3.06	3
market share	10.01%	10.50%	8.1%	7.2%

The registered capital of Sanqi mutual entertainment is 22178642810 yuan, about 2.219 billion yuan. According to the company's prospectus, Sanqi mutual entertainment has a total of 650 million active users before listing. Through formula (1-4) calculation, it is concluded that: $V_{2019}=55.142$ billion yuan; $V_{2020}=700.36$; $V_{2021}=518.48$; and $V_{2022}=433.86$. This paper will make a detailed analysis and interpretation of the results of the estimation of Panax notoginseng mutual entertainment based on the improved DEVA model.

Table 2: The results of Panax notoginseng mutual entertainment based on the improved DEVA model.

Time	Valuation of modified DEVA model	Market value at the end of the year	Deviation
2019	551.42	568.83	3.06%
2020	700.36	659.66	6.17%
2021	518.48	582.63	11.01%
2022	433.86	401.43	8.08%

This paper compared the valuation results of the improved DEVA model with the real market value at the end of the year (December 31), and finally concluded that the deviation rate between most of the data and the real value fluctuated around 5%, basically in line with the user centered valuation method [7]. However, the data deviation in 2020 reached more than 10%, indicating that there are still variables in the model that are not accurate enough to evaluate the value or factors that cannot be better measured for the enterprise value, For example, the cycle of many game companies' products and the trend of game users' willingness to pay will also affect the profitability and revenue level of game companies.

It should be pointed out that the accuracy of valuation results is affected by many factors, including market fluctuations, industry changes and the accuracy of data. Therefore, when using the valuation results for investment and decision-making, it is necessary to comprehensively consider other information and risk assessment.

5. Robustness Testing

In the valuation analysis of Chinese game enterprises, DEVA model is a commonly used evaluation method. DEVA model is mainly based on financial indicators to evaluate the value of enterprises, including stock price, profitability, market potential and other indicators. In this chapter, this paper will first use the traditional DEVA model to estimate the value of Panax notoginseng mutual entertainment, and reveal the value of the enterprise by analyzing the financial data and market conditions.

This paper will evaluate the value of Panax notoginseng entertainment from the perspective of stock price. The stock price is an important indicator to reflect the market's recognition of the value of enterprises. By analyzing the stock price trend of Panax notoginseng mutual entertainment, this paper can understand the investment attitude and expectation of the market for the enterprise. It is also necessary to comprehensively evaluate the value of stocks in combination with the overall market situation and other relevant factors.

This paper will focus on the profitability of Panax notoginseng mutual entertainment. This includes the net profit, return on net assets, profit growth rate and other indicators of the enterprise. By comparing the data of Sanqi mutual entertainment with that of enterprises in the same industry, this paper can evaluate the relative advantages and disadvantages of the enterprise in terms of profitability, and further analyze its future profit potential. It is also necessary to investigate the financial health and profit stability of the enterprise to ensure the accuracy and reliability of the assessment [8].

Market potential is also one of the important aspects of valuation analysis. For game enterprises, the market potential is directly related to their future development prospects and growth space. When valuing Sanqi mutual entertainment, this paper will examine its product line, market share, competitive advantage and other factors to assess its market potential and sustainability.

Therefore, the traditional DEVA model can quantify and evaluate the valuation of Panax notoginseng mutual entertainment by comprehensively analyzing the indicators of stock price, profitability and market potential. However, the traditional DEVA model also has some limitations in practice, such as limited applicability for specific industries and companies, and ignoring the

impact of non-financial factors. Next, this paper will introduce the improved DEVA model and compare it with the traditional DEVA model, in order to further improve the accuracy and reliability of the valuation.

This section aims to verify the valuation results based on the improved DEVA model through empirical test. In order to empirically test the valuation of Panax notoginseng mutual entertainment, this paper selected a series of financial indicators and market data for analysis.

This paper evaluated the profitability of Sanqi mutual entertainment. By analyzing its income statement and cash flow statement, this paper calculated key financial indicators, such as net profit rate, return on assets and return on operating cash flow [9]. The results show that the profitability of Panax notoginseng mutual entertainment is relatively high, indicating that the company has strong competitiveness in the game industry.

This paper studied the growth potential of mutual entertainment of Panax notoginseng. By analyzing the growth trend of its revenue and profit, this paper evaluated the growth rate and stability of the company [10]. This paper also considered the development trend of the industry and changes in market demand to more accurately assess the growth potential of Panax notoginseng mutual entertainment. The results show that Panax notoginseng mutual entertainment has good growth potential and is expected to further expand its market share in the future.

Further, this paper made a comparative analysis of the valuation of Panax notoginseng mutual entertainment. This paper compare the valuation results based on the improved DEVA model with the results of the traditional DEVA model. By comparing the valuation bias and accuracy of the two models, this paper can evaluate the effectiveness of the improved DEVA model in prediction and valuation. The preliminary results show that the improved DEVA model is more accurate and accurate than the traditional DEVA model in estimating the mutual entertainment of Panax notoginseng.

Through the empirical test of the valuation results of Panax notoginseng mutual entertainment, this paper draws a series of valuable conclusions. Compared with the traditional DEVA model, the improved DEVA model has more advantages in terms of valuation and prediction, and shows better interpretation and prediction ability in terms of profitability, growth potential and valuation results of Panax notoginseng mutual entertainment. These empirical results provide an important reference for valuation analysis of Chinese game enterprises.

6. Conclusion

This study focuses on the valuation of Chinese game companies, using an improved DEVA model and the case of Panax notoginseng mutual entertainment as an empirical example. The DEVA model was enhanced to better suit the unique attributes of game companies, incorporating factors like R&D capabilities, content creation, and user engagement. This modification aims to provide a more accurate representation of the value and potential of game enterprises.

The empirical analysis of Panax notoginseng mutual entertainment reveals that the improved DEVA model closely aligns with the company's value. The success of Panax notoginseng is attributed to its strong R&D team and diverse product offerings, ensuring competitiveness in the competitive game industry. However, the study identifies challenges, including market competition intensification and regulatory uncertainties. It recommends a continued focus on innovation, technology research, and adaptation to external changes.

In summary, this research deepens the valuation analysis of Chinese game companies by enhancing the DEVA model and using Panax notoginseng as a case study. The study underscores the importance of core competitiveness and product innovation in determining valuation and acknowledges the industry's challenges.

The research contributes to the valuation analysis of Chinese game companies and provides insights for future research and practice. However, it acknowledges limitations due to data constraints and calls for broader sampling and more in-depth analysis. Future research avenues include refining the DEVA model, incorporating industry trends and macroeconomic factors, and integrating risk management into the valuation process. Additionally, comparing the DEVA model with other valuation models could offer a more comprehensive perspective. The ultimate goal is to continually enhance the accuracy and scientific validity of valuing Chinese game companies, supporting industry development and investment decision-making.

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Digital Transformation of Small and Medium Sized Enterprises (SMEs): Current Status, Dilemmas, and Strategies

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Abstract: With the rapid advancement of information technology, the digital transformation of SMEs has emerged as a critical topic in the development of the digital economy. The advantages offered by digital technology provide novel opportunities for SME growth. Digital transformation not only serves as a pivotal route for fostering innovation and high-quality development within businesses but also stands as an imperative choice in addressing market competition and uncertainties. However, compared to large corporations, SMEs encounter an array of unique dilemmas and obstacles during their digital transformation journey. These dilemmas frequently include a lack of digital awareness, insufficient funding, weak foundations, and talent shortages. This paper begins by examining the current status of SME digital transformation in terms of exploration phase, geographical distribution, and industry distribution. It then delves deep into the reasons behind the dilemmas faced during the digital transformation of SMEs and proposes a set of countermeasures in response.

Keywords: SMEs, Digitalization, Transformation, Current Status, Strategies

1. Introduction

Small and Medium-sized Enterprises, an indispensable component of the national economy, play a profoundly influential role in socio-economic development. They are not only pivotal in ensuring the stability of the national economy but also crucial in achieving collective prosperity. According to a report on the "Digital Transformation Pathways of Chinese SMEs" published by iResearch (2022), by the end of 2021, SMEs accounted for over 99% of market entities, holding a dominant position. Their contribution to the national economy demonstrates the "5678" feature—contributing to over 50% of tax revenues, occupying more than 60% of GDP, representing over 70% of invention patents, and absorbing over 80% of employment [1]. They have actively influenced employment stability, innovation encouragement, and economic enhancement, while also significantly impacting the reduction of income disparity, liberation and improvement of productivity, and elevating economic quality. Currently, digital transformation is becoming a driving force across all industries. With the swift progress of science and technology and the extensive application of information technology, digital transformation has been recognized as a vital strategic option for SME growth. Hence, accelerating the digital transformation of SMEs is of paramount importance. Nevertheless, compared to large enterprises, the issues and difficulties

SMEs face during their digital transformation are relatively more intricate and pronounced. SMEs commonly grapple with insufficient awareness about digital transformation, a dearth of funds, weak foundational structures, and a scarcity of skilled personnel. Therefore, this paper aims to provide an integrated analysis of existing research, examining the current status and dilemmas of the digital transformation of SMEs, and offering potential solutions and recommendations.

2. Current status

2.1. Exploration phase

The "Analysis Report on the Digital Transformation of SMEs (2021)" indicates that 79% of SMEs remain in the initial phase of digital transformation exploration, 12% are in the application exploration phase, and a mere 9% have reached the in-depth exploration phase [2]. Nonetheless, compared to 2020, tangible progress has been made. Over the long term, digital transformation showcases a positive trend; however, generally speaking, SMEs' digital transformation is still predominantly in its nascent stages (See Figure 1).

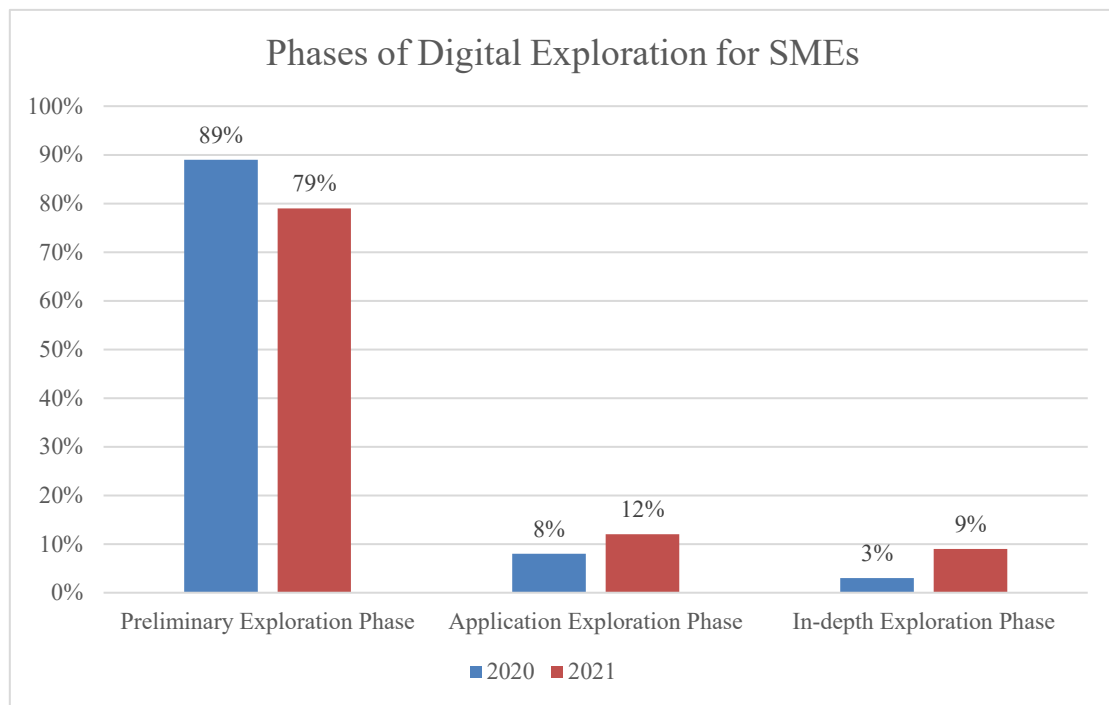


Figure 1: Distribution of SMEs across Digital Exploration Phases

2.2. Geographical distribution

As depicted in Figure 2, the Yangtze River Delta, Pearl River Delta, and the Beijing-Tianjin-Hebei metropolitan clusters emerge as the epicenters for the digital development of SMEs. Specifically, the Yangtze River Delta region boasts the highest proportion of SMEs undergoing digital transformation, followed by the Pearl River Delta, and then the Beijing-Tianjin-Hebei cluster, with respective percentages of 43.0%, 40.1%, and 37.4%. In contrast, the Chengdu-Chongqing and Middle Yangtze urban clusters have proportions of SME digital transformation below the national average, accounting for 34.6% and 31.0% respectively [3]. This predominance of the southeastern coastal regions can be attributed to their advanced economic foundations, relatively mature markets, and comprehensive infrastructure, which collectively provide ample market opportunities and

resources for the digital transformation of SMEs. Additionally, variances in industrial structures among these regions also influence the digital transformation rates. The Yangtze River Delta and Pearl River Delta regions are predominantly dominated by manufacturing and high-tech industries. These industries, compared to others, tend to be more reliant on digital technologies, making SMEs within them more receptive to the importance of digital transformation and subsequently driving them to undertake relevant initiatives.

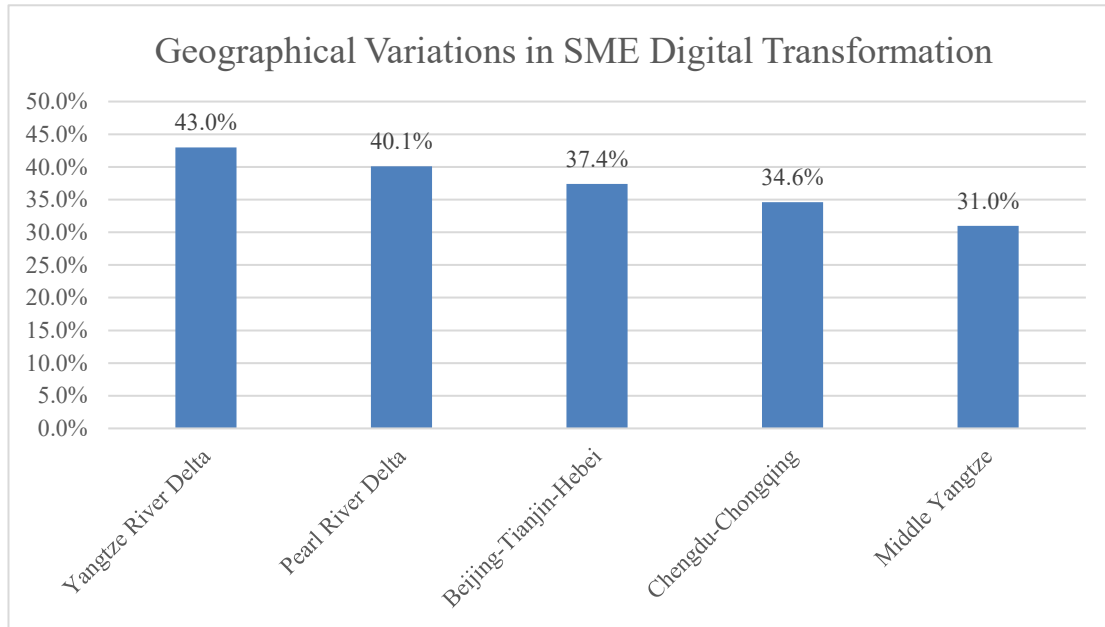


Figure 2: Geographical Variations in SME Digital Transformation

2.3. Industry distribution

According to Figure 3, the computer, communication, other electronic equipment manufacturing, instrument and meter manufacturing, and automotive industries rank highly in terms of digital transformation [2]. This can be attributed to the fact that these sectors inherently possess a high degree of technological intensity and demand for information technology. Notably, the industries of computer, communication, and other electronic equipment manufacturing are intrinsically arenas for the production and application of digital technologies, rendering their need and drive for digital transformation naturally substantial. Moreover, the government's support and guidance in these industries play a pivotal role. Through industry policies, technological R&D, and financial backing, the government provides certain industries with targeted policy support, promoting businesses to undergo digital transformation. For instance, regarding the automotive industry, the government has issued policies to encourage the development of new energy vehicles and intelligent connected vehicles, spurring the sector towards digital and intelligent transformation. This policy endorsement has furnished industries with a conducive environment and conditions for digital metamorphosis.

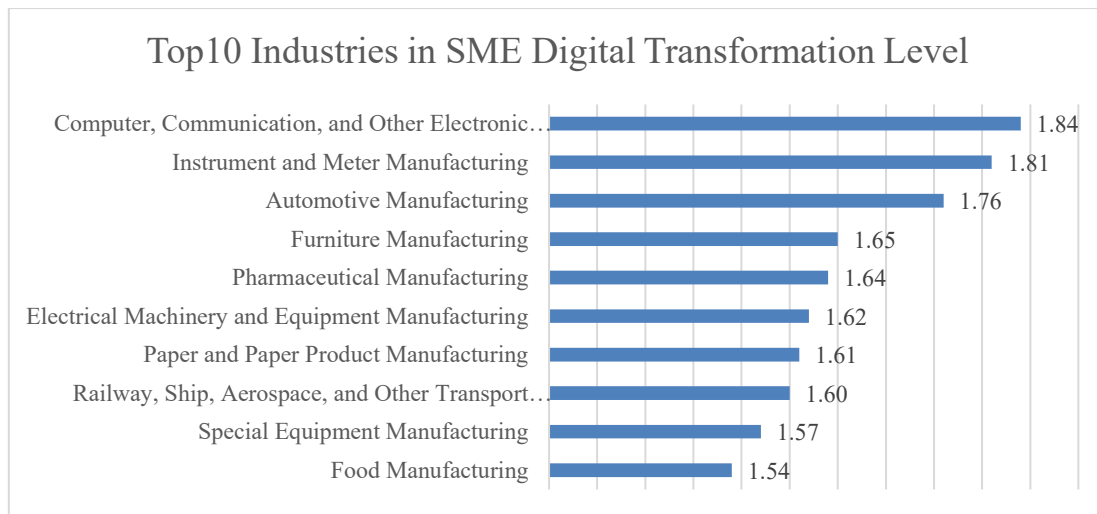


Figure 3: Top 10 Industries in SME Digital Transformation Level

3. Dilemmas

3.1. Inadequate understanding

The prerequisite for successful digital transformation lies in having sufficient willingness for it. This demands a comprehensive understanding among the enterprise's leaders and senior management regarding digitalization and its required investments and impacts. Digital transformation is a prolonged journey, devoid of instantaneous results. Some SME managers, constrained by traditional mindsets, are complacent with the status quo, seeking short-term gains, and hence adopt a pessimistic attitude towards digital transformation. Concurrently, another subset of SME leaders, although positive about digital transformation, possess a myopic understanding of the concept, mistakenly equating the use of certain digital software or systems to comprehensive digital transformation. They lack a holistic, end-to-end framework for digital transformation, leading to diminished efficacy. Surveys illustrate that nearly 50% of SMEs utilized digital tools like modeling and simulation during the R&D process. However, only 20% achieved full digital management in design and R&D. For areas like warehousing and physical logistics where digital applications are advanced, a mere 9% of SMEs have accomplished complete digital monitoring of logistics and warehousing [4].

3.2. Paucity of funds

Digital transformation is reliant on the support of various software and hardware. As the depth of digital transformation augments, a continuous influx of capital is imperative to sustain the operation of the digital system. This mandates SMEs to maintain a substantial financial buffer. Given the relatively smaller operational scale of SMEs, their lower market share, and limited profitability, they find it challenging to fund the significant capital investments needed for digital transformation from their own profits. According to the National Bureau of Statistics, in 2021, the profit margin of SMEs in large-scale industries in our country was merely 6.2% [5]. Furthermore, SMEs possess limited avenues for financing in the capital market, making it strenuous to secure ample external capital support. The high costs involved in updating and upgrading existing information technology equipment, software systems, and training staff compound the challenges. This highlights the capital constraints faced by SMEs in their digital transformation journey.

3.3. Weak foundation

From a Technological Standpoint: SMEs (Small and Medium-sized Enterprises) typically exhibit a lower deployment rate of digital devices and information systems. Coupled with their rudimentary level of digital technology, it becomes challenging for them to establish a proprietary digital platform. This subsequently impinges upon their ability to effectively gather, process, and analyze data. As data indicates, within the realm of production and R&D, the digitalization rate of SMEs generally hovers below 50%. Specifically, the adoption rate of digital equipment in critical procedures stands at 45%, while the coverage of production process information systems is 40%, and the device interconnectivity rate is 35% [6]. Furthermore, due to varying degrees of digitalization across different departments within SMEs, there exists a substantial disparity in data volume and quality. Consequently, this poor connectivity between data points restricts the effective utilization of digital technology to support decision-making and innovation.

From a Cultural Standpoint: In executing digital transformation, a conspicuous void in the digital transformation atmosphere within SMEs is apparent. To accomplish a successful digital transformation, endorsement from top-tier management alone is insufficient. Grassroots management and operational personnel also need to foster an acceptance of digital transformation. This ensures that the entire enterprise is actively engaged in the transformation process. Currently, most SMEs in our country resort to a top-down, obligatory directive for managing transformation. This often engenders resistance and aversion among basic staff, thereby impeding the advancement of relevant initiatives.

3.4. Scarcity of talent

Indubitably, the digital transformation journey hinges on the support of digital talent. Yet, a glaring inadequacy in digital talent is observed across SMEs, stymieing the further progress of their digital evolution. The "Research Report on the Digital Transformation of SMEs in China (2022)" reveals that digital-related talent in SMEs constitutes a mere average of 20%, with only 15% of businesses having established a system for digital talent cultivation [7]. From the Market Perspective: As the wave of digital transformation gathers momentum, an increasing number of enterprises are embarking on this journey, leading to a supply-demand disparity in digital talent. The "Industry Digital Talent Research and Development Report (2023)" estimates a current comprehensive digital talent deficit ranging between 25 to 30 million, and this gap continues to widen [8-10]. From the Enterprise's Own Perspective: On one hand, given the modest scale of SMEs, their limited resources, and relatively lower compensation render them less competitive in the talent market. On the other hand, due to their simplistic operational models and underdeveloped educational and training capabilities, there's a pronounced inadequacy in talent reserves. This lag in the cultivation of digital talent culminates in a dearth of professionals proficient in information systems and skilled in relevant operations when embarking on digital transformation, thereby decelerating the pace of transformation.

4. Strategies

4.1. Cultivating a mindset geared

The government should redouble its efforts in raising awareness by ardently constructing platforms for digital dialogue. Through the medium of seminars, training sessions, and other venues, the imperative nature and merits of digital transformation need to be conveyed. This would steer enterprise leaders to recognize digital transformation as a linchpin in their long-term developmental strategy. It's imperative to embolden them to not only actively embrace but also fervently champion

this transformation, thereby enhancing the digital acumen of management personnel. Concurrently, by spotlighting success cases emanating from SMEs' digital transformation journeys, the tangible benefits and outcomes can be demonstrated to their peers. Such revelations could kindle an interest in digital transformation among leaders and fortify their conviction and determination to tread this path. Furthermore, government departments can form leadership teams for digital transformation efforts and set up communication groups with relevant enterprise departments to provide in-depth operational guidance for digital transformation.

4.2. Increasing support

Firstly, the government can provide relevant policy support, subsidies, and other financial aid to reduce the costs of digital transformation. For instance, for small and medium-sized enterprises engaged in digital transformation, the government could offer corresponding tax relief measures to alleviate financial pressure. Moreover, the government can establish dedicated funds to support digital transformation projects for these enterprises, fostering innovation and technological upgrades. Simultaneously, encouraging financial institutions to provide low-interest loans or other specialized financial products for small and medium-sized enterprises will broaden their financing channels. SMEs should also focus on optimizing internal resources to enhance their self-sufficiency in digital transformation. Establishing a department for digital transformation planning within the enterprise can manage and integrate existing resources. Prioritizing resource allocation and utilization in key areas of digital transformation will promote the efficient utilization of funds.

4.3. Solidifying the foundations

From the perspective of the digital development environment, it is incumbent upon the nation to amplify its efforts in bolstering the infrastructure of industrial internet, artificial intelligence, 5G networks, big data, and other emergent paradigms, thereby optimizing the external milieu for the digital transformation of SMEs. Concurrently, SMEs must also accentuate the construction of their internal information systems. There should be a pronounced impetus to invest in both hardware and software infrastructures to cater to the exigencies of information processing and data storage pivotal to digital transformation. Additionally, enterprises should endeavor to cultivate an ambiance conducive to digital transformation, incorporating such a metamorphosis into the developmental blueprints of all departments. Employees who are proactive in spearheading digital transformation initiatives should be recognized and incentivized. There's an imperative to galvanize the entire workforce to willingly participate, engage in perpetual learning, and foster an ebullient culture of digital erudition. Such an approach ensures that employees continually rejuvenate their knowledge and skills, adapting seamlessly to the ever-evolving digital landscape.

4.4. Accelerating the cultivation

Digital transformation hinges on the symbiotic interplay between humans and data. To acquire more digital talent resources, small and medium-sized enterprises can collaborate with universities and research institutions to establish centers for cultivating digital talent. Enterprises might offer internships, inviting fresh talent to partake in digital-related research endeavors, and facilitating the practical application of theoretical knowledge. Internally, it's incumbent upon SMEs to proffer a plethora of digital training opportunities to their employees and fervently advocate their participation. For grassroots employees, the focus should be on cultivating their practical digital skills. Since there are a considerable number of grassroots employees, companies can selectively train exceptional members within each team in digital skills. These trained individuals can then impart their digital knowledge to their respective teams, thereby improving the efficiency of talent

cultivation. For mid-level and senior management, the emphasis should be on cultivating their understanding of digital models and enhancing their logical analysis capabilities concerning data. Following the training, enterprises should utilize mechanisms such as employee feedback and performance evaluations to monitor and gauge the effectiveness of the training, making necessary adjustments and refinements to the training strategies as required.

5. Conclusion

In summation, the digital transformation of small and medium-sized enterprises (SMEs) remains in its nascent stages. To bolster the digital transformation of SMEs and thus achieve high-quality enterprise development, both the government and businesses should work in tandem. While the government provides support to SMEs in areas of public awareness, fiscal policy, infrastructure development, and talent cultivation, enterprises should also intensify their internal efforts to foster a digital transformation environment. By fully utilizing the various support policies and harnessing their inherent potential, enterprises can contribute constructively to the development of the digital economy.

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Shanghai Tourism Carbon Footprint Measurement Based on Final Consumption and Suggestions for Improvement of Urban Tourism Facilities

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Abstract: As a major tourist city in China, Shanghai's tourism industry generates a great deal of carbon emissions. However, China is now actively practicing measures to reduce carbon emissions in order to protect the environment. Therefore, it is particularly important to measure Shanghai tourism carbon footprint. The results of this study can help characterize the carbon emission of Shanghai's tourist industry, so that the government can better improve Shanghai's tourism - based on its characteristics and reduce the carbon emissions in a more effective manner, which can better respond to the national and global low-carbon trend. This research utilizes the "from bottom to up" approach, collects data from Shanghai's tourism final consumption, measures the sub-industry's carbon footprint using the carbon emission coefficients, and then performs a superposition calculation to determine the characteristics of Shanghai's overall tourism and sub-industry carbon footprint, and the composition of carbon footprint in transportation. It shows following problems: the national environmental protection awareness has not yet been formed, and the tourism's related technologies and service facilities have not been able to guide tourists to reduce carbon emissions. In view of the characteristics and problems, this paper puts forward three suggestions, including the innovation of tourism-related technologies, the transformation of tourism service facilities and the enhancement of national low-carbon awareness.

Keywords: Shanghai, carbon footprint, tourism

1. Introduction

Climate disasters such as extreme heat, droughts and floods across the globe in recent years have reminded humanity of the urgency of mitigating warming. In March 2023, the World Tourism Organization (UNWTO) stated that the carbon footprint of international tourism accounted for 8% of global greenhouse gas emissions, nearly four times as much as estimated [1]. Carbon footprint, is a collection of greenhouse gas emissions from various types of production, consumption and activities by business, organizations or individuals. Tourism has rapid growth in the world today, and scientific management of the tourism carbon footprint is very important in slowing down global warming and is an inevitable choice for realizing sustainable development.

In 2013, the total carbon emission of China has become the largest in the world, accounting for as much as 29% [2]. Shanghai is a Chinese celebrated historical and cultural metropolis, locating near

both the river and the sea, which is rich in tourism resources. According to Shanghai's "14th Five-Year Plan" for tourism development, the city strives to realize an annual tourism revenue of more than 700 billion yuan by 2025. Therefore, it is urgent and necessary to research Shanghai's tourism carbon footprint, and to adopt a "Low-Carbon Tourism" policy in Shanghai, which is also an important measure for the implementation of China's "Dual-Carbon Policy".

In November 2021, many countries signed *The Glasgow Declaration on Climate Action for Tourism*, which aims to halve carbon emissions in the tourism sector by 2030 and to reach net-zero emissions by 2050, with an action plan to measure tourism carbon emissions and accelerate the decarbonization of this sector. In March 2023, in order to fulfill the Declaration, UNWTO issued *Climate Action in the Tourism Sector-An overview of methodologies and tools to measure greenhouse gas emissions*, which aims to provide guidance on the measurement of tourism greenhouse gas emissions [1]. However, due to the complexity of the tourism and the diversity of stakeholders, there is no globally consistent methodologies and tools for measuring carbon emissions. Therefore, according to the existing academic research, this paper starts from the final consumption of tourism, and utilizes carbon emission coefficients to estimate each sector's carbon footprint in tourism, and finally performs superposition calculations to simulate the tourism carbon footprint in Shanghai. Through overall and sub-industry measurement and analysis of the tourism carbon footprint in Shanghai, the results of this study can show the characteristics and problems of the tourism carbon emissions in Shanghai, and put forward reasonable suggestions and solution for improvement.

2. Method

2.1. Sources and Selection of Data

This study simulates the tourism carbon footprint in Shanghai based on existing academic research and obtains tourism data from The Shanghai Statistical Yearbook from 2012 to 2021. The Shanghai Statistical Yearbook contains the most authoritative and government-collected data related to Shanghai. It obtains accurate and comprehensive data on total tourism revenue, number of tourists, per capita consumption of tourists, and other data needed for the measurement.

2.2. Measurement Models and Methods of Data Analysis

The tourism carbon footprint is the greenhouse gas emission quantity generated by individual or group tourists in the course of tourism activities. Currently, there are two main approaches for measuring the tourism carbon footprint: the "from top to down" method based on input-output theory and the "from bottom to up" method based on life cycle theory. The "from bottom to up" method starts from the tourism final consumption, utilizes the carbon emission coefficients to measure each sector's carbon footprint in tourism industry separately, and finally performs the superposition calculation [2]. In this paper, we choose the "from bottom to up" approach to measure the tourism carbon footprint in Shanghai from the perspective of tourism final consumption, because this method is more suitable for measuring the tourism carbon footprint where lack statistical bases of tourism data than the "from top to down" method [3].

2.2.1. Overall Model of Tourism Carbon Footprint

In this paper, with reference to the environmental impact model proposed by Ehrlich and Holden, the overall model of tourism carbon footprint can be expressed as [4]:

$$TCF = F \cdot G \quad (1)$$

i.e.

$$TCF = V \cdot E \cdot R \cdot K \quad (2)$$

In the above equations (1) and (2): TCF is the tourism carbon footprint, F is the total tourism income, G is the carbon emission intensity of the tourism economy; V is the quantity of tourists, E is the per capita consumption, R is the energy consumed by the tourism economy (t standard coal), and K is the carbon emission coefficient of this energy consumption.

2.2.2. Sub-Industry Tourism Carbon Footprint Model

Tourism involves six major sub-industries: catering, accommodation, transportation, excursion, shopping and entertainment, and the carbon emission intensity and unit energy consumption of industries are different, so the sub-industry model of tourism carbon footprint can be established [5]. The carbon footprint of the six sub-industries can be summed up to get the overall tourism carbon footprint with the formula:

$$TCF = CF_c + CF_a + CF_t + CF_v + CF_s + CF_r \quad (3)$$

In equation (3), CF_c 、 CF_a 、 CF_t 、 CF_v 、 CF_s 、 CF_r respectively represents the carbon footprint of catering, accommodation, transportation, excursions, shopping and entertainment. According to the calculation method in the IPCC Guidelines for National Greenhouse Gas Inventories, the tourism carbon footprint industry model can be expressed as follows:

$$TCF = \sum_{i=1}^6 D_i P_i K_i \quad (4)$$

In equation (4): D_i is the income of the i^{th} industry, P_i is the energy intensity of the i^{th} industry, and K_i is the carbon emission coefficient of the i^{th} industry.

2.3. Methods of Data Classification

In this paper, the 2012-2021 tourism data of Shanghai is selected for the overall measurement and analysis of Shanghai's tourism carbon footprint, and the 2019 data is selected for the sub-industry. Because the data of 2022 and 2023 have not yet been released, the complete and appropriate sample size data that can be found in The Shanghai Statistical Yearbook is between 2012 and 2021, so the tourism industry data from 2012-2021 is selected for the overall measurement and analysis of the tourism carbon footprint. The tourism revenue of Shanghai in 2019 peaked before the epidemic, which was 14% of the total GDP of Shanghai in that year, ranking the China's third and the first in the Yangtze River Delta, so the 2019 data is selected as the sample of the sub-industry measurement and analysis of tourism carbon footprint.

3. Results

3.1. Overall Tourism Carbon Footprint Measurement and Analysis

Tourism data is obtained from The Shanghai Statistical Yearbook from 2012 to 2021, including the number of domestic tourists, per capita consumption expenditure and the number of international tourists. Then, the overall tourism carbon footprint model applied to measure Shanghai tourism carbon footprint. The "from bottom to up" approach uses tourism revenue to calculate the carbon footprint, so this paper needs to use the world's average tourism carbon intensity of 635.27kg/thousand dollars and convert the revenue to US dollars according to the responding year's exchange rate, which results in the overall carbon footprint of Shanghai's tourism (Table 1, Table 2, Table 3) [6].

Table 1: 2012 -2021 Carbon Footprint of Domestic Tourism in Shanghai

Year	Domestic tourism revenue/billion dollars	Number of domestic tourists/10,000 person times	Domestic tourism carbon footprint/10,000 tons	Per capita carbon footprint of domestic tourism/kg
2012	508.86	25094	3232.62	128.82
2013	494.40	25991	3140.80	120.84
2014	476.05	26818	3024.23	112.77
2015	484.25	27569	3076.31	111.59
2016	519.35	29621	3299.25	111.38
2017	595.47	31845	3782.85	118.79
2018	688.34	33977	4372.80	128.70
2019	709.65	36141	4508.20	124.74
2020	398.08	23606	2528.87	107.13
2021	549.16	29382	3488.66	118.73

Table 2: 2012 -2021 Carbon Footprint of Inbound Tourism in Shanghai

Year	Inbound tourism revenue/billion dollars	Number of inbound tourists/10,000 person times	Inbound tourism carbon footprint/10,000 tons	Per capita carbon footprint of inbound tourism/kg
2012	55.82	800.40	354.61	443.04
2013	53.37	757.40	339.04	447.64
2014	57.05	791.30	362.42	458.01
2015	59.60	800.16	378.62	473.18
2016	65.30	854.37	414.83	485.54
2017	68.10	873.01	432.62	495.55
2018	73.71	893.71	468.26	523.95
2019	83.76	897.23	532.10	593.05
2020	37.74	128.62	239.75	1864.03
2021	35.85	103.29	227.74	2204.90

Table 3: 2012-2021 Shanghai Overall Tourism Carbon Footprint

Year	Overall tourism carbon footprint / 10,000 tons	Tourism carbon footprint per capita / kg
2012	3587.23	138.53
2013	3479.84	130.10
2014	3386.65	122.66
2015	3454.93	121.78
2016	3714.08	121.87
2017	4215.47	128.84
2018	4841.06	138.83
2019	5040.30	136.08
2020	2768.62	116.65
2021	3716.41	126.04

As shown in Table 1, Table 2 and Table 3, the domestic tourism and overall tourism carbon footprint of Shanghai decreased slightly from 2012 to 2014, and then showed an increasing trend from 2015 to 2019; the per capita domestic tourism carbon footprint decreased slightly from 2014 to

2016. The per capita inbound tourism carbon footprint is generally very high, and has been increasing year by year, which is about three times more than that of domestic tourism. In 2020, Shanghai's overall, domestic tourism, and inbound tourism carbon footprint all plummeted because of quarantine policy in COVID-19 pandemic, and in 2021, Shanghai's overall and domestic tourism carbon footprint have both rebounded significantly with the cancellation of block policy.

3.2. Tourism Sub-Industry Carbon Footprint Measurement and Analysis

This paper applies sub-industry tourism carbon footprint model to measure the carbon footprint of Shanghai's six tourism sub-industries in 2019 (Table 4). Since there is no data related to inbound tourism revenue in The Shanghai Statistical Yearbook, this study only focuses on the domestic tourism carbon footprint measurement and analysis for each industry. Due to lack research on the structure of tourism energy consumption, the carbon emission coefficient of standard coal is assumed to be constant when calculate the tourism carbon footprint, taking the value of 2.45 [7]. The energy intensity coefficient of tourism transportation P_i takes the value of 0.985, and the accommodation, catering, shopping, excursion and entertainment P_i takes the value of 0.188, while the other P_i takes the average energy intensity value of the tertiary industry of 0.774 [8].

Table 4: 2019 Shanghai sub-industry tourism carbon footprint

Sub-Industry	Per capita expenditure of domestic tourists / yuan	Proportion of domestic tourism revenue	Domestic tourism revenue/ 100 million yuan	Energy intensity TCE	Tourism Carbon Footprint (10,000 Tons)	Proportion of total carbon footprint
Transportation	167.00	13.03%	603.55	0.985	1456.53	40.66%
Accommodation	140.00	10.92%	505.97	0.188	233.05	6.51%
Catering	168.00	13.10%	607.17	0.188	279.66	7.81%
Shopping	595.00	46.41%	2150.39	0.188	990.47	27.65%
Excursion	145.00	11.31%	524.04	0.188	241.37	6.74%
Entertainment	15.00	1.17%	54.21	0.188	24.97	0.70%
Other	52.00	4.06%	187.93	0.774	356.38	9.95%
Total			4633.28		3582.43	

The total tourism carbon footprint in the above table is 35.82 million tons, which is a big gap compared with the total tourism carbon footprint measured by the overall model because the tourism carbon footprint sub-industry model only selects domestic tourism-related data, while the two models have different accounting methods and research focuses. The industry model is used to explore the carbon emissions of each sub-industry, in which the carbon footprint of transportation accounts for 40.66%, followed by shopping (27.65%) and others (9.95%). Catering (7.81%), excursions (6.74%), and accommodations (6.51%) all account for a smaller percentage.

3.2.1. Transportation

Based on the 2019 Shanghai domestic passenger arrivals data from the *Shanghai Statistical Yearbook*, this paper adopts the average daily travel distance of tourists, the number of days traveled, and the unit energy consumption of different transportation modes in previous studies to measure the carbon emissions of each travel mode of tourism transportation (Table 5) [3,9].

Table 5: 2019 Carbon Emissions from Domestic Tourism Transportation in Shanghai

The way of transportation	Proportion	Passenger arrivals / 10,000 person-times	Daily travel distance / km	Number of days traveled	Unit energy consumption MJ/pkm	Carbon emissions / MJ	Proportion (energy consumption)
Road	14.25%	3168	6	3.4	1.8	1163289600	18%
Civil aviation	27.52%	6121	6	3.4	2.0	2497368000	40%
Railway	57.71%	12834	6	3.4	1.0	2618136000	42%
Other	0.52%	115	6	3.4	0.9	21114000	0.34%
Total		22238				6299907600	

As seen in Table 5, the total carbon emissions from tourism transportation reached about 6.3 billion MJ, with high carbon emissions from railroad and civil aviation, accounting for 42% and 40%. This is followed by road transportation and others, accounting for 18% and 0.34%.

4. Discussion

Based on the results obtained from the above overall and sub-industry tourism carbon footprint measurement and analysis, this paper can summarize the following characteristics of Shanghai's tourism carbon footprint. First, Shanghai's overall tourism carbon footprint was roughly increasing year by year, with a sudden drop in 2020 due to the epidemic. Second, the per capita domestic tourism carbon footprint had a small decline from 2014 to 2016, due to the central government's emphasis on ecology after the 18th National Congress and it was the beginning of the awareness of low-carbon tourism. The per capita carbon footprint rose again after 2016, indicating that the national environmental awareness had not been formed. Third, the per capita inbound tourism carbon footprint was very high, about four times higher than the domestic one and showing a higher trend year by year, which was due to the high consumption of inbound tourism, and more use of airplanes and other high-carbon emission transportation. Fourth, among Shanghai tourism sub-industry carbon footprint, the transportation industry accounted for the highest, followed by shopping; and the railroad and civil aviation carbon emissions of the transportation industry accounted for the highest. Those characteristics indicate that the related technology and service facilities did not guide companies and tourists to reduce carbon emissions. This paper puts forward a few suggestions to address the above issues.

4.1. Promoting Technological Innovation in the Overall Tourism Industry and Practicing Carbon Reduction

The government can establish multiple zero-carbon demonstration zones with scenic spots as the core. From promoting resource recycling, high-quality water supply, intelligent operation, to building a new type of electric power system and other multi-dimensions, we can work together to realize a zero-carbon region and create a harmonious and beautiful living environment. The demonstration zone can carry out a series of work such as carbon audit and carbon management of the whole life cycle, forming a set of zero-carbon construction planning, construction and management processes that can be promoted. In this way, the city will be able to achieve overall zero carbon for all elements of buildings, transportation, municipalities, and human behavioral activities [10]. Finally, it is suggested that Shanghai should do a better job of integrating and publicizing tourism-related data,

which would be conducive to a better calculation of the tourism carbon footprint and further improvements in carbon reduction. For example, after analyzing the carbon footprints of various sub-industries, it is found that the carbon footprints of the "other" category accounted for a relatively high percentage of the total carbon footprints, so it is recommended that the "other" category be subdivided.

4.2. Conducting Construction or Renovation of Low-carbon Facilities and Services in Tourism

Travel organizations and travel platforms can initiate more sustainable travel projects and build new carbon emission evaluation systems, incentive and guidance mechanisms, as well as closed-loop ecosystems for the industry. In addition, more low-carbon tourism tours can be offered to encourage group tours and reduce self-driving tours.

The Government should improve the "Green Labels" in the entire tourism chain, so as to provide tourists with a guide to low-carbon tourism choices. For example, "Green Landmark" and "Green Building" for scenic spots, "Green Restaurant" for restaurants, "Green Mall" and "Environmental Labeling Low-Carbon Product Certification" for shopping.

Sub-industries can leverage the industry's own green transformation to create an environment that is suitable for low-carbon tourism for tourists. In terms of transportation, for popular tourist routes, cities can vigorously develop environmentally friendly and low-carbon transportation, such as public transportation, cycling greenways, leisure trails, etc., and at the same time introduce innovative green transportation ways such as pure electric cruises on the Suzhou River in Shanghai; for accommodation, green and low-carbon service labels are added to scenic spots and hotels, disposable consumables are no longer provided, travelers are reminded to reduce the change of towels and sheets, etc., and guidance is given on setting energy-saving temperatures for air-conditioning and heating; and for catering and shopping, carbon footprint labels are set on menus and products, and simple green packaging is carried out for items for sale.

4.3. Guiding Tourists to Develop a Low-carbon Tourism Approach

The government and communities can guide individual travelers to fully extend their low-carbon behaviors in daily life to their journeys through publicity and education, issuance of green tourism guidelines, and establishment of low-carbon traveler identification.

For example, choose more hiking, cycling, camping and other low-carbon tourism products that are close to nature. Choose green and low-carbon means of transportation for travel, giving priority to trains, high-speed railways and other means of travel with lower energy consumption per unit, reducing travel by air and private cars. Giving priority to walking, subway or shared bicycles for sightseeing in urban areas. Choose green restaurants in tourism, and taste local specialties made with local food materials. Besides, choose green hotels and reduce the number of changes of bedding and towels. When shopping, bring private shopping bags made of environmentally friendly materials to reduce carbon emissions from white pollution, and eliminate excessive packaging when purchasing tourist souvenirs.

The government can establish a tourism low-carbon traveler identification system and personal carbon accounts for individuals, encouraging travelers to measure the carbon emissions generated during tourism and offset the carbon footprint of their trips through green credits in their carbon accounts.

5. Conclusion

Through the measurement and analysis of overall and sub-industry tourism carbon footprint in Shanghai, this experiment has come up with the basic characteristics and problems of the tourism

carbon footprint in Shanghai: the overall tourism carbon footprint in Shanghai was generally high and basically showed a year-on-year growth trend, indicating that the national environmental literacy has not been formed. In addition, the carbon footprint of inbound tourism -was about four times higher than that of domestic tourism. The evidences above all indicate that the relevant technology and service facilities in the tourism industry have not been able to guide tourists to reduce carbon emissions, and have not provided tourists with a green and low-carbon tourism environment.

For the above problems, this experiment puts forward relevant suggestions to solve them: the government can promote technological innovation in the overall tourism industry and use advanced technologies to achieve zero-carbon emissions inside scenic spots and in the surrounding areas; the government, tourism organizations, and the sub-industries should carry out the construction or renovation of low-carbon facilities and services in tourism; and finally, the government should guides the tourists to form a low-carbon tourism way.

This study provides clear recommendations and rationale for reducing the tourism carbon footprint in Shanghai, not only to help the city adopt a "low-carbon tourism" policy, but also to contribute to the implementation of China's "Dual-Carbon Policy". Innovations in technology and service facilities for the tourism industry can help the industry to make a green transition, and guide tourists to low-carbon tourism either. Although this research analyzes the carbon footprint only by the "from bottom to up" approach and the results may be not very comprehensive and inaccurate, it is hoped that more professionals will conduct more authoritative measurement of tourism carbon footprint in the future, so as to provide targeted suggestions for reducing the carbon footprint of tourism and even more industries.

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Research of Golden Investment Opportunity of the Blue-Chip Dividend King

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Abstract: Johnson & Johnson (JNJ) stands as a titan in the healthcare conglomerate sector, having long played a significant role in the global market. This paper undertakes a literature review methodology to delve deeply into JNJ's historical context, diverse business arms, and financial prowess. A Discounted Cash Flow (DCF) and comparative valuation method are applied to assess JNJ's investment potential, supported by a rigorous risk evaluation encompassing various facets from market dynamics to legal challenges. Concurrently, the study gauges the alignment of JNJ's strategies with prevailing pharmaceutical and healthcare trends. Conclusively, the analysis suggests tailored investment recommendations, encapsulating both immediate and future outlooks. The primary objective is to furnish prospective investors with a well-rounded assessment of JNJ's investment promise.

Keywords: Johnson & Johnson (JNJ), Discounted Cash Flow (DCF), Risk Analysis, Investment recommendations, Healthcare trends

1. Introduction

Johnson & Johnson, established in 1886, has historically been a beacon in the global healthcare industry. With its diversified portfolio spanning pharmaceuticals, medical devices, and consumer health products, J&J has consistently been a favored investment choice. Its unwavering commitment to medical innovation and its longstanding dominance in the healthcare market have made it a cornerstone in numerous investment portfolios, especially for those seeking reliable dividends.

However, in recent years, the investment aura around Johnson & Johnson has been clouded by various challenges, not least of which include political pressures and a series of legal confrontations. From 2018 until the present day, Johnson & Johnson has faced numerous potential lawsuits concerning the presence of talc in its formerly popular product -Johnson's Baby powder. These lawsuits allege that the powder caused ovarian cancer, asbestos poisoning, and other illnesses among thousands of users. Consequently, J&J shares have experienced a decline of approximately 15% over the past year alone; thereby reducing its market value from \$480 billion to around \$400 billion. These challenges have led to significant fluctuations in J&J's market value, raising questions about its continued stature as the "king of blue-chip dividends".

Set against this backdrop, this paper seeks to navigate the complex investment landscape surrounding Johnson & Johnson. The core objective is to holistically evaluate J&J's current investment viability, considering its financials, the inherent risks, and the overarching trends in a

dynamic healthcare industry characterized by regulatory shifts, patent intricacies, and technological innovations [1].

Subsequent sections will delve deeply into J&J's financial position, challenges, and strategic trajectory. Our comprehensive analysis aims to arm investors, financial analysts, and other stakeholders with insights, culminating in a decisive evaluation: Does Johnson & Johnson still merit its golden reputation among both short-term and long-term investors?

2. Company Overview

Johnson & Johnson, originating from humble beginnings in 1886 as a modest pharmacy, has risen to stand among the giants of the global healthcare sector. With a reputation built on consistent innovation and adaptability, the company has manifested its expertise across three pivotal segments: Pharmaceuticals, Medical Devices, and Consumer Health Products. This broad-spectrum approach underpins its dominant foothold in the healthcare realm [2].

Johnson & Johnson's pharmaceutical arm has shown resilience and growth. In 2022, it boasted sales figures of \$52.6 billion, reflecting a 1.7% growth from the previous year. The first quarter of 2023 maintained this momentum, recording a revenue growth of 4.2%. Driving this growth are blockbuster products, with Stelara and Darzalex taking the forefront. Particularly, Darzalex, a therapeutic for multiple myeloma, registered a striking 22% quarterly revenue spike.

The Consumer Health segment is on the precipice of transformation. Set to branch out as the independently listed "Kenvue" by the end of 2023, it recorded a robust Q1 2023 revenue of \$3.85 billion, a 7.4% surge from prior figures. The segment's success has been fueled by over-the-counter sales, anchored by household names like Tylenol. These sales accounted for a notable 43% of the segment's total figures [3].

This segment is a testament to Johnson & Johnson's adaptability, especially in the wake of global challenges like the pandemic. Reporting a sales figure of \$27.4 billion in 2022, marking a 1.4% uptick from the preceding year. U.S. sales were particularly strong, seeing a 5.4% rise. The first quarter of 2023 brought in revenues of \$7.48 billion. The Surgery and Orthopedics sub-sectors remain foundational pillars, contributing \$2.4 billion and \$2.24 billion respectively in Q1 revenues [4].

In the ensuing sections, we'll embark on a more granular analysis of these segments, aiming to decode their impact on Johnson & Johnson's overarching financial blueprint. Coupled with this, a critical risk assessment based on recent performances will be presented, alongside a detailed examination of the firm's strategic alignments in an ever-fluctuating healthcare environment. Our ultimate objective remains to offer stakeholders an in-depth insight into the investment caliber of Johnson & Johnson.

3. Valuation Analysis

In valuation analysis of J&J, the paper aims to derive a clear picture of the company's intrinsic worth using established metrics and methodologies. Through these methods, we intend to ascertain the fair value of J&J's stock, which will inform potential investment decisions.

3.1. Valuation Metrics

Price-to-Earnings (P/E) Ratio: As of July 23, 2023, JNJ's P/E ratio is 46.08, notably higher than the sector average of 29.4, suggesting that investors anticipate strong growth or stability in the company.

Price-to-Book (P/B) Ratio: JNJ's P/B ratio stands at 5.23, signifying the market values J&J much higher than its book value, indicating confidence in its prospects and intangible assets [5].

Dividend Yield: J&J offers a dividend yield of 3.09%, making it an appealing option for income-oriented investors.

3.2. Discounted Cash Flow (DCF) Analysis

The DCF analysis is a robust methodology for estimating the intrinsic value of a stock. By projecting future cash flows and discounting them to present value, we can assess whether a stock is undervalued or overvalued. Key inputs for the DCF analysis of Johnson & Johnson (J&J) include:

Table 1: JNJ Revenue & Expenses Forecast [1]

(USD in millions)	Projections					
	01-2023	01-2024	01-2025	01-2026	01-2027	01-2028
Revenue	94,943	101,171	103,195	109,965	113,279	115,607
%growth	1%	7%	2%	7%	3%	2%
Cost of goods sold	(30,989)	(32,361)	(32,349)	(33,781)	(34,103)	(34,108)
% of Revenue	33%	32%	31%	31%	30%	30%
Selling, G&A expenses	(24,765)	(26,390)	(26,917)	(28,683)	(29,548)	(30,155)
% of Revenue	26%	26%	26%	26%	26%	26%
Research & Development	(14,603)	(15,561)	(15,872)	(16,913)	(17,423)	(17,781)
% of Revenue	15%	15%	15%	15%	15%	15%
Net interest & other expenses	(2,861)	(3,049)	(3,110)	(3,314)	(3,414)	(3,484)
% of Revenue	3%	3%	3%	3%	3%	3%
Tax expense	(3,784)	(3,035)	(3,180)	(3,477)	(3,670)	(3,834)
Tax rate	17%	13%	13%	13%	13%	13%
Net Profit	17,941	20,775	21,767	23,796	25,121	26,244
% Margin	19%	21%	21%	22%	22%	23%

3.2.1. Revenue & Expenses Forecast

JNJ's future projections indicate varying revenue growth, peaking at 7% in 2024 and 2026, and stabilizing around 2% towards 2028. Despite these variations in revenue growth, the company's cost structures remain relatively consistent, hinting at steady operating efficiency. A notable observation is that the net profit margin shows an improving trend, rising from 19% in 2023 to an anticipated 23% in 2028.

Table 2: Capital Expenditure Plan [5]

USD in millions	Projections					
	01-2024	01-2025	01-2026	01-2027	01-2028	
Capex	4,235	4,320	4,603	4,742	4,840	
%of Revenue	4%	4%	4%	4%	4%	
	Historical					
	01-2019	01-2020	01-2021	01-2022	01-2023	5y Avg
Capex	3,670	3,498	3,347	3,652	4,009	3,635
% of Revenue	4%	4%	4%	4%	4%	4.2%

3.2.2. Capital Expenditure Plan

Capital expenditure (Capex) remains stable at 4% of revenue throughout the projected years. Looking back, the 5-year historical average Capex is 4.2%, closely aligning with future forecasts. This

consistent allocation for Capex suggests that JNJ is planning for sustained reinvestment in its operations.

Table 3: Depreciation & Amortization Schedule [5]

Average useful life(years)	5				
(USD in millions)	Projections				
	01-2024	01-2025	01-2026	01-2027	01-2028
For Capex in					
2020	700				
2021	669	669			
2022	730	730	730		
2023	802	802	802	802	
2024	847	847	847	847	847
2025		864	864	864	864
2026			921	921	921
2027				948	948
2028					968
Total Depreciation & amortization	3,748	3,913	4,164	4,382	4,548

3.2.3. Depreciation & Amortization

The anticipated depreciation & amortization values are mapped based on a 5-year average useful life of assets. As the Capex is expected to grow, so does the total depreciation & amortization, gradually increasing from \$3,748 million in 2024 to \$4,548 million in 2028.

Table 4: Changing in Working Capital Forecast [5]

(USD in millions except days)			Projections				
	Historical Avg	01-2023	01-2024	01-2025	01-2026	01-2027	01-2028
Days receivables	61		61	61	61	61	61
Trade receivables		16,160	16,780	17,166	18,416	18,868	19,282
Days payables	132		132	135	135	134	135
Trade payables		(11,703)	(11,688)	(11,959)	(12,482)	(12,509)	(12,574)
Days inventory	131		131	135	138	135	136
Inventory		12,483	11,657	11,979	12,762	12,599	12,705
Net working capital		16,940	16,749	17,186	18,695	18,958	19,413
Change in NWC			(191)	437	1,509	262	256

3.2.4. Working Capital Management

JNJ's net working capital is forecasted to ascend over the period. The primary factors contributing to this rise are the anticipated increases in trade receivables and inventories, counterbalanced by trade payables. This progression underscores the company's expected growth in operations and potential expansion.

Table 5: DCF Terminal Value [5]

(USD in millions)		6M/2024	2025	2026	2027	2028	Terminal
Profit before tax		11,905	24,947	27,273	28,791	30,079	
(-)Net interest income/expense		(434)	(885)	(943)	(971)	(991)	(968)
(+)Depreciation & Amortization		1,874	3,913	4,164	4,382	4,548	4,365
EBITDA		14,213	29,744	32,380	34,144	35,618	34,047
(-)Tax		1,518	3,180	3,477	3,670	3,834	3,661
(-)Capex		2,118	4,320	4,603	4,742	4,840	4,728
(-)Change in NWC		(96)	437	1,509	262	456	742
Free Cash Flow		10,673	21,807	22,790	25,469	26,488	24,916
Terminal Value							527,237
WACC/Discounted rate	6.8%						
Long-term growth rate	2.0%						
Timing of FCF(midyear)		0.25	1	2	3	4	4.5
Present Value of FCF		10,499	20,415	19,973	20,896	20,344	391,800
Enterprise Value	483,926						
Projection period	92,126	19.0%					
Terminal Value	391,800	81.0%					
(-) Current net debt		37,172					
Equity Value		446,754					
(/)Outstanding shares		2,408					
Fair Price		186					

3.2.5.DCF Terminal Value and Fair Price Estimation

JNJ's EBITDA is projected to experience steady growth, which after deductions for tax, Capex, and changes in working capital, yields the Free Cash Flow (FCF). Using the calculated FCFs and considering a terminal value of \$527,237 million (which assumes a 2% perpetual growth rate), the present values of these cash flows are derived using a discount rate of 6.8%.

Post adjustments for current net debt, JNJ's equity value stands at \$446,754 million. Distributing this value over the existing 2,408 million shares, the stock's fair price is approximated at \$186.

4. Discussion

The comprehensive DCF valuation of JNJ presents a fair stock value of \$186. With revenue and EBITDA showing signs of steady growth and considering the company's operational forecasts and capital expenditure plans, this valuation emphasizes a potentially undervalued stance for JNJ (assuming the market price is below \$186). This suggests potential growth and value realization for shareholders in the future.

4.1. Risk Analysis

Johnson & Johnson (JNJ) operates in the highly dynamic healthcare sector, where its business is exposed to various external and internal factors that may pose potential risks. In this risk analysis, we will classify these risks into three main categories: Market and Industry Risks, Financial and Operational Risks, and Legal and Ethical Risks.

4.2. Market and Industry Risks

Regulatory Changes: Johnson & Johnson faces significant risks associated with changes in regulations within the healthcare industry. Being a global player, it is subject to different regulations across various markets. Recent shifts in regulatory stances concerning intellectual property rights and pricing have raised concerns. Public policies both domestically in the U.S. as well as internationally have become increasingly unfavorable toward protecting intellectual property rights, which presents a considerable challenge for JNJ. The company's ability to obtain sufficient patent protection for new products and technologies remains uncertain while existing patents face continuous challenges through litigation processes such as Inter Parties Review (IPR) proceedings. Additionally, the introduction of biosimilar alternatives under the Biologics Price Competition and Innovation Act (BPCIA) adds another layer of complexity as competitors can contest patents on innovator biologics. If JNJ fails to defend its patents successfully, there could be a sudden decline in revenue when generic or biosimilar products enter the market "at risk."

Market Dynamics: Market dynamics and competition are fundamental risks for JNJ's operations. Approximately 25% of their projected sales for 2022 come from new products introduced within the past five years, highlighting their reliance on innovation for growth. However, the success of new products relies on various factors, such as accurately predicting future healthcare demands, achieving positive results in clinical trials, obtaining intellectual property protection, and securing timely regulatory approvals. The competitive environment and evolving customer preferences can influence the acceptance and triumph of novel offerings. Furthermore, real-world safety and effectiveness findings as well as the introduction of competing products may impact JNJ's market positioning [6].

4.3. Financial and Operational Risks

Financial Stability: Johnson & Johnson maintains investment-grade credit ratings that are crucial for ensuring its financial stability. Any potential downgrade by credit agencies could lead to increased borrowing costs, restricted market capacity for commercial paper issuance, or necessitate additional collateral for derivative contracts. Maintaining a strong creditworthiness is essential to ensure liquidity, capital position, and access to capital markets.

Operational Challenges: Operating across diverse global markets exposes JNJ to various financial, economic, and operational risks. Approximately 49% of its sales occur outside the United States which makes it vulnerable to fluctuations in foreign currency exchange rates. Currency devaluation and high inflation rates in certain economies like Argentina, Turkey, and Venezuela pose operational challenges that could potentially result in operating losses. Moreover, despite legal restrictions on importation from countries with lower prices for pharmaceutical products into the US and other markets; illegal imports can still negatively impact sales volume and profitability [7].

4.4. Legal and Ethical Risks

Recent Lawsuits and Regulatory Scrutiny: Johnson & Johnson has faced legal hurdles including lawsuits related to their pharmaceutical products as well as talcum powder usage claims. Competitors have also initiated legal proceedings challenging the company's patent rights. Regulatory scrutiny, especially concerning interactions with government officials in various countries, poses significant legal and ethical risks. Compliance with anti-bribery laws like the U.S. Foreign Corrupt Practices Act (FCPA) is vital, given the heavily regulated nature of the healthcare industry [7].

Ethical Considerations: Ethical considerations are paramount in JNJ's operations, given its role in healthcare. Ensuring that its products meet high ethical standards is essential to maintain public trust and protect its reputation. These considerations extend to interactions with healthcare providers, pricing strategies, and ensuring patient safety.

In conclusion, Johnson & Johnson operates in a complex and highly regulated industry, facing multifaceted risks. These risks span from regulatory changes and patent challenges to financial stability and ethical considerations. To mitigate these risks effectively, JNJ must maintain rigorous compliance, adapt to evolving market dynamics, and prioritize innovation while remaining vigilant about ethical practices. Continuously monitoring and adapting to changes in the healthcare landscape is crucial for safeguarding its long-term success and reputation.

5. Conclusion

The research into Johnson & Johnson (JNJ) paints a comprehensive portrait of a company with a longstanding legacy of stability and trust, particularly in the realm of dividends. Its AAA credit rating and an uninterrupted track record of dividend growth over six decades attest to its robust financial health and dependable operational model. However, the company's recent travails, specifically related to the talc baby powder debacle, have introduced an element of uncertainty and volatility.

The pivotal moment of an \$8.9 billion settlement proposition brings both a sigh of relief and a sense of apprehension. While on one hand, it has the potential to restore the dented investor confidence, on the other, its repercussions on JNJ's immediate financials and cash flows remain a concern. The fluctuating market response, as observed by the transient surge in stock prices post-settlement news, further exemplifies the precarious position of JNJ in the current scenario [8].

This study, however, is not without its limitations. Our research predominantly focused on financial projections and the company's past performance. A deeper dive into the company's product pipelines, patent expirations, and other potential litigation threats might yield insights that can further inform investment decisions. Furthermore, a comparative analysis with its peers in the pharmaceutical and consumer goods sectors might have provided a broader industry perspective.

Given the dual nature of JNJ's present circumstances - its historical resilience versus its current challenges - potential investors are advised to adopt a bifocal approach. In the immediate term, JNJ's dividend offerings serve as a beacon for those seeking stable returns amidst economic unpredictability. However, it is imperative to keep abreast of evolving patent scenarios and any regulatory mandates that might come into play.

JNJ's intrinsic value might currently be veiled by the shadows of its legal challenges. Observing the proceedings related to the talc issue is crucial. A positive resolution could usher in a wave of renewed trust and potentially unlock the company's suppressed value. Yet, prudence is the keyword here. The magnitude of the settlement, both in financial and reputational terms, cannot be overlooked.

In the future landscape, deeper investigations into JNJ's product diversifications, its research and development trajectory, and a holistic industry analysis might reveal avenues of growth and potential risks. It is essential to not just focus on the present quandary but also envision the company's potential to innovate and lead in the healthcare domain.

For the world of pharmaceuticals and consumer goods, where trust and consistency are paramount, JNJ's journey post this challenge will be a case study in crisis management, resilience, and strategic foresight.

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The Improvement of Brand Identity and Sales with UNRL

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Abstract: Currently, customers perceive UNRL as a unique brand with a craft feel. Constants for this brand are quality fabrics, unique styles, and a more tapered athletic fit. This higher quality is reflected in the company name UNRL, which refers to the term "unreal," used in sports to describe the pinnacle of performance and exceptional moments. UNRL's core mission includes "leaving a legacy," which entails engaging in causes that are meaningful to customers. As UNRL expands, it will need to keep its brand and mission relevant to its expanding core of customers. This article determines marketing strategies by analyzing the influence of influencers on consumer behavior on social media and the costs to be borne. The analysis identifies influencers that businesses can leverage to help refine and improve their brand identity to better differentiate themselves amongst their competitors in the athleisure industry.

Keywords: UNRL, Brand, athletes

1. Introduction

Individuals are spending more time on social media and closely following the activities of their favorite influencers. As influencers share their day-to-day with their followers, fans pick up on the products they use and wear. Because they advocate various products via social media, these influencers have a big impact on consumer behavior, and businesses can use influencers to help grow their target audience [1,2].

Nike is a prime example of this phenomenon. According to the article "5 Benefits to Athlete Endorsements", Nike started working with Michael Jordan in 1984, and by 2009, the "Nike Jordan" brand accounted for 75% of basketball shoe sales in the USA and accounted for 10.8 percent of the total sneaker market [3]. Market sensations are made possible by the public's adoration and worship of influencers. When fans admire and idolize someone, they generally connotate them to wearing high-quality products, which leads to fans wanting to buy the same products and partake in similar activities.

Influencer programs are benefitting brands with their new marketing strategy, allowing for growth in the current target market and expansion of that market. In this report, Clark Consulting will present the analysis of this plan and the benefits it can bring in detail for the company and the influencer/athlete.

Clark Consulting seeks to help UNRL settle on athlete partnerships that will provide them with long-term success between athlete and athleisure relations. Clark Consulting's proposal plan for UNRL x Team UNLMITD is a comprehensive plan that will give a face behind UNRL's brand and

give them the exposure they need. Clark Consulting will begin this plan with three athletes but encourage UNRL to expand even further with more athletes in the future. The team did not just pick any ordinary athletes, but ones that are realistically attainable for UNRL and align with its goals as an up-and-coming athleisure company. All three of the athletes are professional athletes in the NHL, PGA, and NFL. Clark Consulting is confident that by bringing together three distinct athletes with very diverse backgrounds, UNRL will be able to establish its niche when it comes to expanding into new target markets.

The solution to boosting UNRL's social media engagement is to partner with Kellen Mond, Lexi Thompson, and Jason Zucker to create a Team UNLMITD. Clark Consulting believes that these athletes could provide a substantial increase in UNRL's growth as a company by providing them with a significant increase in their social media growth via Instagram posts. Clark Consulting recognizes the potential that each of these athletes could bring to UNRL's future in social media, as each athlete could bring the fanbases of their sports. A growth for UNRL's Instagram base also could provide an extremely unique and beneficial opportunity due to Instagram's features and picture-based post style allowing a more visual style of branding. Clark Consulting believes that the acquisition and implementation of Team UNLMITD would be both within reason and prove to be very effective in UNRL's future growth.

2. Strategy Development

Clark Consulting's selection process for Team UNLMITD consisted of finding athletes that are ideal fits not only due to their sport and fanbases but also by their personality and values. Clark Consulting strived to find athletes who fit not only the basic requirements but those athletes who fit the mold and values of UNRL so they could truly embody what it means to be an UNRL athlete. Team UNLMITD was built surrounding these focuses, and is composed of Kellen Mond, Lexi Thompson, and Jason Zucker.

Kellen Mond is a rookie quarterback for the Minnesota Vikings. His current affiliation with the Minnesota Vikings could help continue the partnership that UNRL already has with the Vikings [4]. Lexi Thompson is an American professional golfer on the PGA Tour [5]. Jason Zucker is a Left Winger who currently plays with the Pittsburgh Penguins [6], however for much of his career he played for the Minnesota Wild. All three athletes possess a fairly large follower base on Instagram - 68.3 thousand, 523 thousand, and 78.9 thousand, respectively. The difference in their Instagram audiences provides UNRL with the potential to attract notice from multiple fan bases with them on Team UNLMITD. All three athletes also fit UNRL's mold as characters. During Mond's time at Texas A&M, he demonstrated the values of "leaving a legacy" and "we before me" as he was an outspoken activist his senior year in college in the removal of a controversial statue according to ESPN [7]. Lexi has worked with and sponsored the Wounded Warrior Project throughout her career, as well as previously working with the Seal Legacy Foundation as reported by The Golf Channel [8]. Zucker's Give16 charity is currently collaborating with UNRL to help fund the University of Minnesota Masonic Children's Hospital. All three athletes have so far in their careers demonstrated amazing qualities both on the field and off the field, which makes them great members of Team UNLMITD.

3. Various Influence Factors

UNRL will use this strategic collaboration to help with social media marketing. According to Sprout Social, 55% of consumers learn about new brands on social media [9]. With three Instagram-verified athletes promoting UNRL's products in their posts, UNRL can effectively build its Instagram following. Furthermore, Gen Z and Millennials, who are UNRL's target market, are much more inclined to discover brands like UNRL through social media.



Figure 1: Practical sponsorship ideas that lay out 6 main benefits that businesses would gain through sponsorships.

The strength of the Halo Effect stems from cognitive bias, where followers unknowingly transfer their positive feelings to a brand from the respective athlete.

Through sponsorship, UNRL is able to effectively reach an audience of engaged and passionate fans, negating any time or money that would be wasted trying to search and build their target audience.

With customers becoming increasingly harder to reach through traditional marketing methods, sponsorship enables UNRL to create personal experiences. UNRL can combine their brand message, interactive elements, and audience in a live setting.

Social proof is a phenomenon that regards how others influence our own behaviors. For example, consumers would be more inclined to go to a busy store over an empty one with the belief that it is better. The only proof of this is that the busy store has more popularity.

Team UNLMITD would be able to disperse more information to a larger audience including any events, competitions, sales promotions, product announcements, and more brand exposure.

With the combination of having an engaged audience along with the “halo effect” and “social proof” the opportunity for word-of-mouth referrals dramatically increases.

4. Financial Analysis of Team UNLMITD

As influencer marketing thrives in today’s social media powerhouse, social media has begun to categorize its influencers. Team UNLMITD will feature influencers from two unique categories: mid-tier influencers & macro-influencers (Appendix A: Understanding Influencer Marketing Tiers). The categorization allows influencers to be easily grouped and separated to allow applying compensation and incentivization to their social media engagement and performance. Both Kellen Mond and Jason Zucker represent UNRL’s development with mid-tier influencers, while Lexi Thompson will represent the macro-influencer division. These tiers will allow UNRL to see active growth in the following of the athletes while balancing the costs of the influencer campaign. According to Rhythm Influence, “Many of the best campaigns utilize a mix of influencer tiers to hit different audience segments” [10]. Team UNLMITD provides a diverse range of influencer tiers that will allow UNRL to target a variety of audiences and bring brand awareness to the company.

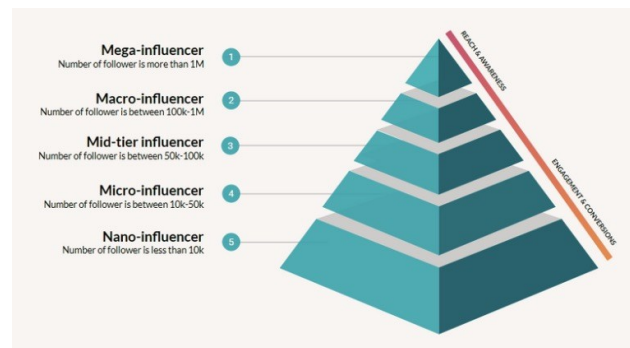


Figure 2: Influencer Division

4.1. Pay-Per-Like Strategy

While influencer marketing has a variety of compensation strategies, a pay-per-like model will allow TEAM UNLMITD to be consistently incentivized to increase engagement and activity on social media while allowing UNRL to keep its marketing budget minimized. The model will allow the athletes to be compensated for each individual. Typically, with similar models like Cost-Per-Click (CPC), advertisers set a "cost-per-click" that charges the corresponding website for their advertisement. Similarly, the pay-per-like model, set at a rate of \$0.02 per like, will compensate TEAM UNRL for their individual social media successes.

As the followers of an influencer increase, so does the potential of brand exposure for the intended advertisement. With this in mind, Team UNLMITD consists of influencers with already established followings that will ultimately lead to the success of the partnership.

4.2. Engagement Ratio

As stated in Buffer, "when influencers can get their followers to engage with their social media posts, the influencer marketing campaign becomes more effective for the brand as those followers are essentially engaging with the brand." The calculated engagement ratio is essential to monitoring and tracking the success of UNRL's athletes. Most social media marketing experts agree that a good engagement rate is between 1% to 5%. The more followers you have, the harder it is to achieve Hootsuite. Currently, the athletes occupy engagement rates within or exceeding these percentages. In order for UNRL to reach the largest and most engaging group, it is essential that Mond, Thompson, and Zucker sustain their overall interaction. As shown in Table 1, the selected athletes are as follows: All three athletes maintained an average of 4500+ likes for their posts. The engagement ratio is between 2% and 12%, maintaining and even far exceeding the socially defined good engagement ratio.

Table 1: Selected athletes

Acquired Athlete	Kellen Mond	Lexi Thompson	Jason Zucker
Instagram Following	68.3K Followers	524K Followers	78.9K Followers
Average # of Likes per post	8,100 Likes	10,500 Likes	4,700 Likes
Engagement Ratio (Average # of Likes/Following*100)	11.9%	2%	6%

Table 2: Expected Expenses of Athlete Involvement [11]

Acquired Athlete	Kellen Mond	Lexi Thompson	Jason Zucker
Low-Engagement Post Cost Average	2-5k Likes *.02 =\$70.00	5-7k Likes *.02 =\$120.00	500-3k Likes *.02 =\$40.00
Mid-Engagement Post Cost Average	5-8k Likes *.02 =\$130.00	7-10k Likes *.02 =\$170.00	3.5-6k Likes *.02 =\$95.00
High-Engagement Post Cost Average	8-15k Likes *.02 =\$230.00	10-20k Likes *.02 =\$300.00	6-10k Likes *.02 =\$160.00
Engagement Costs (by Post Engagement Predictions)	(L) \$70.00*5=\$350.00 (M) \$130.00*10=\$1,300.00 (H) \$230.00*5=\$1,150.00 0	(L) \$120.00*5=\$600.00 (M) \$170.00*10=\$1,700.00 (H) \$300.00*5=\$1,500.00	(L) \$40.00*5=\$200.00 (M) \$95.00*10=\$950.00 (H) \$160.00*5=\$800.00
Individual Athlete Payout	\$350.00+\$1,300.00+\$1,150.00=\$2,800.00	\$600.00+\$1,700.00+\$1,500.00=\$3,800.00	\$200.00+\$950.00+\$800.00=\$1,950.00
Expected Expense on Athlete Pay-Per-Like Deal	\$2,800.00+\$3,800.00+\$1,950.00=\$8,550.00		

As shown in Table 2, for all three athletes, different degrees of Engagement Post Cost Average are given. The final Expected Expense on Athlete Pay-Per-Like Deal is around \$8,550.00. Incentivisation is essential to maintaining and also encouraging the athletes to join Team UNLMITD. Primarily, we plan on providing each athlete with a UNRL starter pack valued at a combined cost of \$834.00.

4.3. Financials in Summary

Through the combination of a photoshoot, an Instagram marketing plan, and incentivization, UNRL is estimated to spend \$10,084 on the acquisition of Mond, Thompson, and Zucker. With the low overhead and minimal debt UNRL currently has, this investment will come at just a small cost to UNRL. Ultimately, the partnership is expected to regenerate and multiply the revenue through the expansion of e-commerce sales.

5. Implementation Strategies

5.1. Presenting and Securing Athlete Partnerships

The initial phase of implementing Team UNLMITD involves presenting the potential partnerships to Kellen Mond, Lexi Thompson, and Jason Zucker. This critical stage requires meticulous management and oversight to effectively pique their interest in collaborating with UNRL. While Clark Consulting has devised attractive incentives and financial rewards, it is crucial for UNRL to establish a clear direction for negotiations with the athletes. The timing for scheduling meetings with the athletes may vary, but Clark Consulting anticipates a realistic window of approximately one month for this stage.

5.2. Developing Team UNLMITD Marketing Campaigns

Moving forward, the focus will shift to crafting a comprehensive marketing plan that prominently features and celebrates Team UNLMITD. This will involve creating introductory posts showcasing all the athletes together and individual posts highlighting each athlete separately. Additionally, separate campaigns will be devised not only for UNRL's account but also for the individual Instagram accounts of each athlete. The meticulous development of these campaigns, including the creation of twenty posts per athlete, is expected to take about a month.

5.3. Implementing Team UNLMITD Marketing Campaigns on Instagram:

Once the marketing campaigns are ready, UNRL will commence their implementation, introducing Team UNLMITD through the developed posts. On the day of the announcement, introductory posts will be made, followed by a strategic Instagram post plan established during stage two. As this phase involves each athlete releasing twenty posts featuring UNRL, it is essential to ensure a balanced approach to avoid overwhelming their followers. This stage is projected to last several months to achieve maximum impact and engagement.

5.4. Tracking Progress and E-commerce Sales

In stage four, the focus will be on measuring the impact of Team UNLMITD on UNRL's growth and performance. This involves closely monitoring the increase in followers, engagement rate, and e-commerce sales during this period. The simultaneous implementation of stage three and tracking progress will take a couple of weeks to allow for a thorough analysis of the impact of Team UNLMITD.

5.5. Evaluating Success through SM Engagement & E-commerce Sales

The final stage entails a comprehensive evaluation of Team UNLMITD's success for UNRL. An in-depth assessment of the achieved accomplishments and return on investment will be conducted to determine the effectiveness of the partnership. Based on the growth and results achieved during this period, UNRL will make informed decisions about continuing with Team UNLMITD, potentially expanding the team, or exploring new athlete options. This evaluation process is estimated to take around a month following the conclusion of the deals with the athletes.

6. Mitigating the Risks

6.1. Contract/Performance

The immediate risks that are poised towards UNRL with Team UNLMITD are contractual and pay issues. Those issues, however, will ultimately prove to be low risk to UNRL. While athlete refusal is entirely possible, there are many other qualified athletes who fit into the dynamic that Clark Consulting has designed for Team UNLMITD. This same idea applies to pay issues as well. While Clark Consulting does not expect these issues to arise, if they were they can be corrected by moving forward with athletes willing to contract with UNRL.

6.2. Performance/Health

An Athlete's performance and Health are also questionable when concerning Team UNLMITD, as an athlete's performance can directly impact their following. While there is no specific surefire method to guarantee against these risks, they were factored in during contract length planning in order to

minimize these risks. With a 20-post contract, even if a player was to sustain a career-ending injury or retire, the contract would have long expired by the time their following begins to deteriorate later on.

6.3. Social Media Followings/Actions

Instagram is crucial when concerning Team UNLIMITD. For this reason, a sudden drop in social media following as well as the actions taken by the athletes have a major impact on the performance of the athletes. These risks were the cause of why Clark Consulting chose to have a strict criteria basis around the character and values of the athletes. To find athletes who share the same beliefs with UNRL in order to limit the risk of athletes saying anything opposed to UNRL, and the risk of the athlete's lacking integrity.

6.4. Personal Lives/Business Decisions

Team UNLIMITD is at its core a marketing campaign, and for that reason share the risk of an athlete's personal life choices impacting their reputation, and therefore UNRL's reputation. This risk is the cause of why Clark Consulting focused on athletes who previously and currently display strong characteristics that align with UNRL's beliefs. UNRL could also be endangered by their athletes leaving UNRL and partnering with different companies. In order to mitigate this risk, Clark Consulting designed Team UNLIMITD surrounding a set of values and talent. This allows UNRL to then bring in new athletes for Team UNLIMITD in the future.

7. Conclusion

Team UNLIMITD would provide UNRL with opportunities to not only appeal to a larger portion of their target demographic but also to new demographics and new opportunities. With fan bases from the NFL, College Football, NHL, and LPGA, and an appeal to the woman demographics, Team UNLIMITD provides UNRL with a wide variety of opportunities and consumers. Team UNLIMITD also fits the character of UNRL as the athletes comprising the Team also hold very similar values as UNRL does as a company. By using Instagram with its easy-to-share features and Instagram marketplace, Team UNLIMITD would be put in a position to shine for UNRL. Team UNLIMITD will be able to grow a significant fanbase for UNRL while on Instagram due to their fanbases and popularity but should specifically majorly help UNRL's e-commerce growth due to Instagram's online focus as an app. Team UNLIMITD will change UNRL as a company by providing them an increase in their social media engagement on Instagram while bolstering their e-commerce sales.

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Study on the Current Status of Regional Economic Resilience

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Abstract: Against the backdrop of today's increasingly frequent financial crises and cyclical economic fluctuations, economic resilience has become a hot topic in the field of regional research. This article will conduct in-depth research on the current situation of regional economic resilience development in China. This study will start from the perspective of enhancing regional economic resilience. This article constructs a relatively comprehensive evaluation index system in the research. At the same time, the author uses the entropy weighted TOPSIS method to scientifically measure the level of regional economic resilience. Based on the measurement, the development status of each province from 2012 to 2012 is comprehensively evaluated. Finally, a comprehensive analysis is conducted on the spatiotemporal dynamics of the evolution of regional economic resilience. The results of the study found that the overall level of economic resilience in China is steadily increasing. Among them, most regions have enormous potential for improvement, and regional differences are gradually narrowing.

Keywords: Economic Resilience, Entropy Weight TOPSIS, Time and Space Dynamics

1. Introduction

Nowadays, China's comprehensive capabilities have significantly increased, and its international influence is expanding [1]. In this context, when faced with the repeated outbreaks of the new coronary pneumonia epidemic, the global economy is subjected to a strong external shock. China's economic system has shown a relatively strong ability to withstand external shocks. This economic phenomenon reflects the importance of strong economic resilience for the economy to achieve good and stable development. Since the twenty-first century, the country's urbanisation rate has increased from 36.22 percent in 2000 to 63.89 percent in 2020. Cities are now primarily responsible for the economic growth of an area [2]. The performance of different cities in response to external shocks varies, with the high economic resilience of the region achieved through technological innovation to achieve industrial structure upgrading, driving regional economic growth. Cities not only need to identify and resist crises before they occur but also need to reconstruct new development paths after the crisis has formed so that the economy can rebound quickly. Based on the background information provided above, this paper will measure the development index of regional economic resilience by creating a system of indicators for it, analyse the dynamic evolution of regional economic resilience over time and space from both a macro and micro perspective, and investigate patterns of change in

its evolution, which is unquestionably crucial for the areas to improve their capacity to handle the problem.

2. Literature Review

2.1. Evolution of Economic Resilience's Concept

The concept was first introduced by Reggiani et al. [3]. As a result, the study of it has gradually become an important research element in the field of economic geography. Prior to 2010, research on regional economic resilience was relatively scarce and consisted mainly of exploratory literature on how resilience theory could be applied to the fields of study of economics and geography, with its current conceptual definitions generally including engineering and ecological resilience from an equilibrium perspective, and adaptive resilience from an evolutionary perspective. In recent years, facing multiple challenges such as the new coronary pneumonia that ravaged the world, the response of regional economic systems to sudden external shocks has become a topic of increasing concern for researchers. Scholars in related fields of study define it as having four dimensions: anticipation, preparedness, response and recovery [4–5]. The academic community's understanding of the concept of economic resilience has gradually evolved. The content is also becoming increasingly rich. Specifically, at the beginning, it was decomposed into the dimensions of resisting shocks, responding to shocks, and adapting to shocks by creating new development paths. The subsequent evolution is to define it as the ability of a region to withstand shocks, restore economic growth, and restructure its recovery path in a competitive market environment. Ultimately, its concept is summarized as breaking the inherent economic model within the system and reshaping a new development path. The dynamic adjustment process is the ability to adjust, involving multiple stages, including resistance, resilience, and the ability to make adaptive adjustments after being hit by shocks [6–8]. The academic understanding of its connotation also extends from the resilience of a country's economic system after being hit by a shock to the ex-ante prevention of a crisis (designing vulnerability indicators to predict risks and avoid excessive accumulation of risks), the ex-ante stabilisation (coping with and overcoming shocks), and the ex-post recovery (recovering from a crisis as soon as possible).

2.2. Measurement of Economic Resilience

Measurement of economic resilience is one of the key elements essential to the empirical study of regional economic resilience, and existing measurement methods mainly include qualitative and quantitative approaches. Qualitative measurement is mainly in the form of case studies, comparing different regions horizontally or different time periods in the same region vertically, rather than calculating a specific value. Quantitative research mainly includes the resilience index system and simple economic indicators in two ways. So far, the two main measures of economic resilience include the following. The first is to measure regional economic toughness by using the method of analysing core variables that reflect higher sensitivity to economic shocks, such as changes in the employment rate, changes in the unemployment rate, and so on [9–11]. The second is the indicator system method. Pan Aimin and Wu Youlong constructed the first-level indicators as shock resilience and recovery and adjustment capacity and measured urban economic resilience with a system of 18 second-level indicators, such as local budgetary revenues and per capita gross domestic product [12].

The author summarizes the core essence of the concept of regional economic resilience and the core elements it involves. This summary is based on research in the relevant literature. First, the paper defines the core of the concept as the defense mechanisms of the regional economic sector stimulated by external shocks. At the same time, the concept also includes the core capacity of the region to support rapid economic development in the absence of external shocks. In addition, the core elements

of regional economic resilience should include resilience at the scale level, structural level, innovation level, openness level, institutional level and social level. This is the basis of the author's analysis.

3. Construction of the Indicator System

The following combination of data availability and other factors makes the scale of toughness, structural toughness, innovation toughness, openness toughness, institutional toughness, and social toughness of the six aspects of the construction of the economic toughness indicator system more comprehensive (Table 1). ①Scale resilience: from the economic scale and population size to measure the scale toughness; ②structural toughness. It mainly measures the region's urban and rural structure. ③innovation toughness. It measures innovation capacity in terms of both R&D input and R&D output. ④ Openness resilience. It measures the region's external dependence. ⑤ Institutional resilience. It measures institutional resilience in terms of ownership structure, distribution system and economic operation mechanism. ⑥ Social resilience. It measures the social resilience of the region in terms of public services and the ecological environment.

Table 1: System of indicators for evaluating economic resilience(a)

Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
Structural resilience	Urban and Rural Structure	Ratio of income of urban and rural residents	Social resilience	Social public services	Social Security
		Ratio of Consumption Level of Urban and Rural Residents			Number of beds in medical institutions/number of resident population
Innovation Resilience	R&D Input	R&D Expenditure of Industrial Enterprises Above Scale			Total education expenditure Infrastructure construction
		Full-time equivalent of R&D personnel of industrial enterprises above designated size			
	R&D Output	Number of effective invention patents of industrial enterprises above designated size			Cultural construction
Openness Resilience	External Dependence	Total Import and Export/GDP			Resource Consumption
Institutional resilience	Ownership Structure	Development of non-state economy Tertiary		Ecological environment	Environmental management
					Labour productivity

Table 1: System of indicators for evaluating economic resilience(b)

Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
Scale resilience	Economic scale	Gross Domestic Product	Institutional resilience	Distribution system	Labour productivity Capital productivity
		Fixed Asset Investment			
	Population size	Provincial resident population		Economic operation mechanism	Factor market allocation
	Market size	Total retail sales of consumer goods			Government consumption as a share of total consumption

4. Results and Analysis

The data comes from the China Statistical Yearbook [2]. According to the data availability 31 provinces of China were selected as the research object to scientifically measure the development level of China's regional economic resilience from 2012 to 2020. Firstly, to eliminate the differences in scale and order of magnitude between the indicators, the indicators are standardised. Secondly, considering that the contribution of each indicator to the level of regional economic resilience has certain differences. Therefore, the entropy weighting method is used to assign weights to each indicator, and then the TOPSIS method is used to calculate the D^+ and D^- of each evaluation object according to the weights of each indicator calculated by the entropy weighting method, which finally results in the evaluation index of the regional economic resilience level from 2012 to 2020

$$RER_{i,t} = \frac{D_i^-}{D_i^+ + D_i^-}.$$

Firstly, the author divided the 31 provinces analyzed into four regions: eastern, central, western, and northeastern. This division is based on traditional geographical locations. Subsequently, the author drew a line chart of regional economic resilience from 2012 to 2020 based on the measurement results (Figure 1) and conducted in-depth research on their development status. From the perspective of spatio-temporal dynamic evolution, Figure 1 can be found: 1. China's eastern region has the highest level of economic resilience and has always ranked first in the country, which is closely related to the fact that the eastern region has a more solid economic foundation, a more diversified industrial structure, and the economic system is more stable; 2. The economic resilience of China's central region has always been ranked at the second level in the country, and China's central region's economic resilience level has shown a significant trend of incremental increase, which indicates that the central region attaches great importance to the development of economic resilience. This indicates that the central region attaches great importance to the potential of improving economic resilience. 3. The level of the northeastern region is generally ranked third in the country, and there is a certain degree of fluctuation; 4. The level of the western region has almost always been located at the country's lowest level, which is closely related to the western region's backwardness in economic development but also reflects the economic resilience of China's western region, where there is still more room for growth.

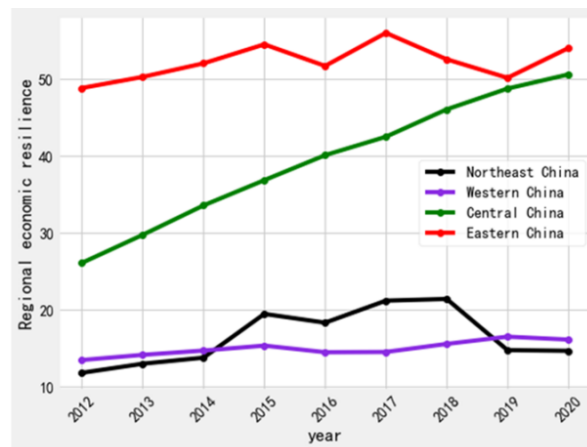


Figure 1: Evolution of spatial and temporal dynamic of regional economic

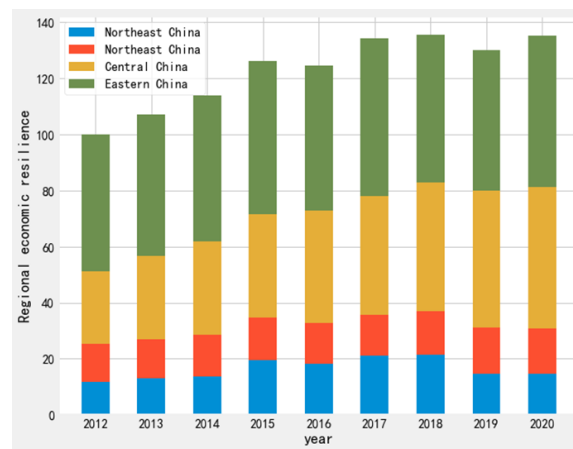


Figure 2: Histogram of regional economic resilience stacks

The following is an analysis of the current status of China's economic resilience development from a macro perspective. According to the data obtained from the previous measurements, a bar chart of regional economic resilience stacking from 2012 to 2020 is drawn (Figure 2). Observing Figure 2, it can be observed that from a macro perspective, the overall resilience of China's regional economy is showing an increasing trend. This result indicates that the overall economic development status of China is relatively stable.

5. Discussion

To sum up, this paper can initially conclude that the region with high economic speed and high quality development has a stronger ability to withstand economic risks, and will not experience too much turbulence in facing external shocks. The level in the central region of the country is in the middle of the national scale, and thus there is still some room for growth. The economic resilience of the western part of the country is at the lowest level nationally. However, the gradual implementation of policies such as the Western Development Programme and the "One Belt, One Road" can, to a certain extent, lead to the development of the western region. The development of the western region is also accelerating. This inherent ecological advantage provides natural wealth for economic operations. Therefore, it can be concluded that the economic resilience level of the cities in the western region has the potential to increase to a certain extent. The level of the eastern region of China is at the

highest level in the country, which is closely related to the geographical advantages and solid foundation of economic development. As the region with the best level of economic resilience development, the eastern region plays a crucial role in leading the nation's economic resilience, and actively drives other regions to move upward while developing itself.

Based on the above research results, the author will propose relevant policy recommendations. Firstly, the government should pay more attention to the issue of regional economic resilience. Secondly, the regions should be given a distinctive strategic deployment that suits the economic resilience of each region. For example, each region's own development strengths should be maximised and its weaknesses should be focused on. Finally, it should be emphasized that the key to improving regional economic resilience is to improve the level of economic development. So it is necessary to take all measures to ensure the high-quality development of the national economy.

6. Conclusion

The primary findings of this study indicate that, when viewed from a micro viewpoint, the disparities in the degree of economic resilience development amongst provinces have progressively decreased, and there is a significant opportunity to improve regional economic resilience in China. Most regions have greater potential for strengthening their economic resilience. Macroeconomically speaking, China's regional economic resilience has generally been on the rise, and the country's regional economic resilience development is currently in a pretty steady state. Corresponding recommendations for effectively enhancing regional economic resilience are also provided. Ultimately, the primary flaw of this paper's research is that it only addresses the theoretical aspect of the subject of how to increase regional economic resilience. Research on methods to support the development of regional economic resilience is the focus of the follow-up improvement plan. This includes developing an economic model to do targeted quantitative analysis and choosing the main explanatory variables.

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The Impact of Online Shopping on Household Consumption Structure in China

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Abstract: Amidst a rapidly evolving technological landscape and improved economic conditions, online shopping has seamlessly woven itself into the fabric of our daily lives, subtly reshaping household spending patterns. This comprehensive study delves deep into the profound influence of online shopping on the structures of family consumption, drawing insights from theories encompassing online shopping, family consumption, and various consumption categories. The primary focal point of this research revolves around the transformative impact of online shopping on consumption behaviors within Chinese households. Leveraging data from the 2018 China Family Tracking Survey (CFPS) and carefully controlling for variables such as age, marital status, education level, and health status, which reflect both family and individual economic characteristics, the study unravels a compelling correlation between online shopping and the enrichment of household consumption structures. To address potential concerns regarding endogeneity, instrumental variables and propensity score matching techniques are adroitly applied, further fortifying the premise that online shopping plays a pivotal role in advancing household consumption. This robustness reinforces the initial regression findings, providing a nuanced understanding of the evolving dynamics of family consumption in the digital age.

Keywords: online shopping, family consumption structure, development consumption, enjoy consumption, subsistence consumption

1. Introduction

In the context of rapid technological advancement and improving economic standards, online shopping has become an integral part of people's lives, reshaping household consumption patterns. This study explores the impact of online shopping on family consumption structure by employing theories of online shopping, family consumption, survival consumption, development consumption, and enjoyment consumption.

Initially, the paper examines how online shopping influences the consumption structure of Chinese households. Utilizing data from the 2018 China Family Tracking Survey (CFPS), variables such as age, marital status, education level, and health status are controlled for, representing both family and individual economic characteristics.

The findings indicate a substantial correlation between online shopping and the enhancement of household consumption structure. Potential endogeneity issues were addressed through instrumental variables and propensity score matching, further reinforcing the notion that online shopping

significantly contributes to the advancement of household consumption. These results affirm the robustness of the baseline regression outcomes.

Furthermore, the study conducts a heterogeneity analysis by categorizing the sample into urban and rural subgroups.

2. Literature review

In recent decades, there have been a large number of studies on the status quo and changing trend of household consumption structure. This paper aims to summarize some important research in this field. The life cycle hypothesis was first proposed by Modigliani and Brumberg [1] the idea is that individuals plan their spending and saving behavior and adapt it to their longevity. Friedman [2] proposed the permanent income hypothesis, that is, consumption decisions are based on individual expectations.

Long-term average income rather than current income. Ando and Modigliani [3] further developed this theory and emphasized its impact and testing on a holistic level. Their research provides important insights into the composition of household consumption structures. Hall [4] examined the stochastic effects of the life cycle/permanent income hypothesis, providing both theoretical and empirical evidence. The study reveals the importance of considering income uncertainty and risk for understanding household consumption behavior. Deaton and Muellbauer [5] developed an econometric model, the Almost ideal Demand System (AIDS), for estimating consumer demand. Their research has an important impact on the analysis of the composition of household consumption structure and the identification of changing trends and patterns. Campbell and Mankiw [6] studied the relationship between permanent income, current income, and consumption, and Empirical evidence is provided to support this hypothesis. Carroll [7] proposed the buffer savings model.

The model is based on the life cycle/permanent income hypothesis. The model assumes that families will be maintained a savings buffer against income uncertainty. The research helps to understand the family how to respond to changes in income and consumption patterns. These important studies laid the foundation for the analysis of family elimination

The basis of current status and changing trend of fee structure. Further research is needed on emerging factors, such as technological advances the impact of demographic changes and the evolution of social norms on household consumption patterns.

When studying the current status and changing trends of consumption structure, scholars primarily analyze using price elasticity, expenditure elasticity, and income elasticity. Zhang Yingxi [8] suggests that urban residents in our country exhibit flexibility in consuming services related to transportation, communication, healthcare, and entertainment, while services related to household, education, and housing lack flexibility. Yuan Huilian [9] found that the insufficient consumer demand of urban residents in our country is particularly prominent, with a decrease in the proportion of basic necessities such as food and clothing. The effects of income and price factors on consumption structure upgrading change over time. Cui Jingwen [10] analyzed the impact of cognitive ability on residents' household consumption using 2018 China Family Panel Studies (CFPS) data, revealing that an improvement in individual cognitive ability significantly positively promotes total household consumption and non-durable consumption expenditures. Zeng Guojun [11] believe that as urbanization progresses, the differences in food consumption structure between urban and rural residents gradually decrease, the essentiality of food decreases, and the demand for meat, poultry, and vegetables rises. These significant studies lay the foundation for understanding the current status and changing trends of household consumption structure. Further research is needed on emerging factors such as technological progress, demographic changes, and the evolution of social norms' impact on household consumption patterns.

Hermeking [12] believes that regional culture influences internet consumption. Zhang Yongli and Xu Lamei [13], based on survey data from 1,735 households in 15 impoverished villages in Gansu Province, found that internet usage helps improve the consumption level and optimize the consumption structure of rural households. Zhao Baoguo and Gai Nian [14] utilized internet consumption finance-related data from 2007 to 2017 and discovered that the development of internet consumption finance has a greater impact on residents' development-oriented consumption expenditures than on basic survival consumption, contributing to the expansion of residents' development-oriented consumption expenditures. Yin Zhigao and Ren Taizeng [15] found that mobile internet can promote the improvement of rural residents' consumption levels and the upgrading of consumption structures. Through reviewing existing literature, it's observed that research on online shopping and residents' consumption mainly focuses on the impact of online shopping on the total volume of residents' consumption, with less attention given to the impact of online shopping on the upgrading of residents' consumption. Online shopping breaks the constraints of time and space, providing an excellent user experience, leading to a massive user base. Given China's current economic development, untapped consumption potential, and the need for consumption structure improvement, analyzing the impact of online shopping on the upgrading of residents' consumption can significantly benefit the promotion of consumption upgrading and the stimulation of consumption potential in our country. Li Xuyang [16] and others believe that using the internet helps increase development and enjoyment-oriented consumption within households, promoting the upgrading of residents' household consumption. Yang Jianzheng [17] and others empirically analyzed the promoting role of e-commerce in economic growth.

This article will use micro-level data to study the impact of household consumption upgrading and analyze the differentiated effects of online shopping on urban and rural residents. The aim is to supplement existing literature and provide insights into how to stimulate consumption in the new normal. Current domestic and international scholarly research on household consumption structure is predominantly qualitative, with limited quantitative analysis. This paper proposes to use quantitative research methods to academically investigate the upgrading of household consumption in China from the perspective of online shopping. On one hand, it fills a gap in quantitative research on household consumption structure in academia. On the other hand, this article attempts to provide a quantitative analysis perspective, offering a research direction for future in-depth studies on household consumption structure and serving as an academic reference for scholars.

3. Research methods

The data utilized in this paper has been sourced from the 2018 Court Tracking Investigation project by the China Social Science Survey Center at Peking University, known as CFPS (China Family Panel Studies). The CFPS questionnaire offers comprehensive information on personal and familial aspects such as family economics, employment, income, familial relationships, cognitive abilities, attitudes, and behaviors. Of particular significance to this study is the core variable of interest, which pertains to whether family members have engaged in online shopping, as well as the relevant data concerning subsistence, development, and enjoyment consumption within the household consumption framework.

For the purpose of quantitative analysis, this paper establishes the following model to explore how online shopping influences the household consumption structure:

$$consum_i = \alpha_0 + \beta_1 onlsho_i + \sum \beta_i X_i + \mu_i \quad (1)$$

3.1. Explained variables

In this paper, the dependent variable under examination is the household consumption structure, quantified by the ratio of development and enjoyment expenses to the overall household consumption spending. The household economic questionnaire within the CFPS database employs the same classification system as the China Statistical Yearbook, which divides household consumption spending into eight distinct categories: food, clothing, housing, household equipment and supplies, transportation and communication, education, culture and entertainment, medical care, and other goods and services. Consequently, computing the dependent variables becomes a straightforward process. Subsistence consumption encompasses food, clothing, and housing expenses, while development consumption is the sum of education, transportation, communication, and healthcare spending. Enjoyment consumption comprises the combined costs of household equipment and supplies, entertainment, cultural services, and other expenditure categories.

3.2. Main explanatory variables

Whether family members have done online shopping, if so, assign it a value of 1; If not, the value is set to 0.

3.3. Control variables

At the level of the head of household, the main control variables are the age of the head of household, marital status (unmarried status =0, married status =1), health status (very healthy =1, very healthy =2, relatively healthy =3, average =4, unhealthy =5), and confidence in the future (the higher the value of 1-5, the higher the confidence in the future). The household level controlled for variables such as household per capita income and whether there were patients in the household (no patients =0, one patient =1, two patients =2, three patients =3).

4. Results and Discussion

Table 1: Baseline regression result.

VARIABLES	consum(1)	consum(2)	consum(3)	consum(4)
onlsho	0.0308***	0.0370***	0.0465***	0.0519***
	(-5.21)	(-5.01)	(-6.23)	(-6.94)
marsta		0.0767***	0.0755***	0.0740***
		(-10.1)	(-9.98)	(-9.77)
health		0.0232***	0.0118***	0.0131***
		(-10.99)	(-4.04)	(-4.5)
edu		-0.002	0.0011	0.0019
		(-1.27)	(-0.71)	(-1.16)
confid		0.0035	0.0048**	0.0042*
		(-1.56)	(-2.12)	(-1.9)
patient			0.0461***	0.0445***

Table 1: (continued).

			(-5.34)	(-5.15)
aveinc			-0.0130***	-0.0085***
			(-6.88)	(-4.28)
age		-0.0011***	-0.0012***	-0.0010***
		(-6.20)	(-6.59)	(-5.64)
Constant	0.3688***	0.2768***	0.4119***	0.2970***
	(-131.64)	(-16.8)	(-17.67)	(-8.79)
Province FE	NO	NO	NO	YES
Observations	7,136	7,136	7,136	7,136
R-squared	0.004	0.035	0.046	0.062
r2_a	0.00366	0.034	0.0447	0.057
F	27.19	42.89	42.75	12.34

Note:*** p<0.01, ** p<0.05, * p<0.1

This model includes just one independent variable: whether online shopping (onlsho). In this model, we are examining whether online shopping is positively associated with the household consumption structure. The low R-squared value suggests a weak model fit, accounting for only 0.4% of the variance.

Model consum (2) : Expanding on Model consum (1), this model incorporates two additional control variables: marital status (marsta) and the health status of the household head (health). In this extended model, we investigate whether online shopping, marital status, and the health status of the household head exhibit significant positive correlations with the household consumption structure. While the model fit has improved slightly, it still remains relatively low, explaining only 3.5% of the variation.

Model consum (3) : Building upon Model consum (2), this model introduces four additional control variables: education level (edu), confidence in the future (confid), the presence of patients in the family (patient), and the natural logarithm of per capita income (aveinc). In this extended model, we explore the significant relationships between online shopping, marital status, the health status of the household head, family illness, and the natural logarithm of per capita income with the household consumption structure. While the model fit has improved further, it still remains relatively low, explaining only 4.6% of the variation.

Model consum (4) : Province FE has been included in Model consum (3). Within this model, the relationship between each control variable and the household consumption structure exhibits a fundamental consistency, and the degree of model fit is enhanced further, elucidating 6.2% of the variance.

Whether online shopping (onlsho) or not, in all four models, we consistently observe a significant positive correlation between online shopping and the household consumption structure. Notably, in the final model (consum (4)), the coefficient is 0.0519 with a significance level of 0.01. This suggests that households opting for online shopping tend to exhibit relatively higher consumption structures. This inclination could be attributed to the likelihood that online shoppers are more inclined to embrace novel consumption approaches and explore a wider range of products.

Marital Status (marsta):

Our research has identified a noteworthy positive correlation between marital status and family consumption structure. It appears that the consumption structure in married households tends to be relatively higher. This phenomenon could be attributed to the propensity of married households to invest in superior products and services for their family members, thereby enhancing the overall household consumption structure.

Health status of the head of household:

The empirical findings reveal a noteworthy positive correlation between the health status of the household head and the household consumption structure. This linkage may stem from the observation that households with better health are more inclined to prioritize the acquisition of products and services that contribute to physical and mental well-being during their consumption, consequently enhancing the overall household consumption structure.

Educational attainment (edu) :Our analysis revealed an absence of a significant relationship between educational attainment and household consumption structure. This implies that within our sample, educational attainment exerts a relatively limited influence on household consumption structure. This phenomenon might be attributed to other variables, such as income, age, etc., playing more substantial roles in shaping consumption structures.

Confidence in the Future (confid) : Confidence in the future exhibits a positive correlation with household consumption structure, albeit with a relatively low level of significance. This observation suggests that households with greater confidence are somewhat more inclined to prioritize high-quality product and service purchases during consumption, contributing to an enhancement in the household consumption structure, albeit with a relatively modest impact.

The presence of patients in the household: Our empirical findings indicate a significant positive correlation between the presence of patients in the household and the household consumption structure. This association might be explained by the increased financial resources directed toward medical expenses and the care of the ill within the family, ultimately leading to a relatively higher overall household consumption structure. To ensure the proper care of unwell family members, additional investments in medicines, medical equipment, and treatment services may be required, thereby influencing the overall consumption structure.

Ln per capita income (aveinc): Our empirical results reveal a significant negative correlation between Ln per capita income and the household consumption structure. This might be attributed to higher-income households allocating a greater portion of their earnings to savings and investments after fulfilling their basic needs, rather than immediate consumption. Consequently, this leads to a relatively lower household consumption structure. Moreover, households with higher incomes often exhibit a heightened focus on cost-effective consumption, evading excessive spending, thus maintaining a lower consumption structure.

Age: Our study identifies a significant negative correlation between age and the household consumption structure. This is likely because, with advancing age, family members tend to undergo changes in their consumption preferences and habits, placing greater emphasis on practicality and cost-efficiency, which results in a reduced household consumption structure.

In summary, our empirical analysis indicates that the household consumption structure is influenced by multiple potential factors. Although the model's explanatory power is relatively modest, we can still draw some preliminary conclusions regarding the relationship between the household consumption structure and the control variables. In future research, delving into other potential variables that may impact household consumption structure can enhance the model's explanatory capacity and offer more comprehensive insights into household consumption behavior and policy formulation.

Table 2: Instrumental variable regression results

The first stage				
VARIABLES	consum(1)	consum(2)	consum(3)	consum(4)
The importance of the Internet as information	0.1645***	0.1086***	0.1037***	0.1023***
	-70.85	-38.4	-36.32	-35.91
Province FE	NO	NO	NO	YES
The second stage				
VARIABLES	consum	consum	consum	consum
onlsho	0.0396***	0.0583***	0.0862***	0.1000***
	(-4.31)	(-3.27)	(-4.56)	(-5.24)
marsta		0.0785***	0.0784***	0.0772***
		(-10.17)	(-10.21)	(-10.07)
health		0.0233***	0.0118***	0.0133***
		(-11.02)	(-4.05)	(-4.55)
edu		-0.0033*	-0.0009	-0.0006
		(-1.78)	(-0.50)	(-0.30)
confid		0.0034	0.0046**	0.0041*
		(-1.49)	(-2.07)	(-1.82)
patient			0.0461***	0.0443***
			(-5.33)	(-5.13)
aveinc			-0.0147***	-0.0104***
			(-7.23)	(-4.94)
age		-0.0009***	-0.0008***	-0.0005**
		(-3.55)	(-3.07)	(-2.05)
Constant	0.3668***	0.2626***	0.4015***	0.2755***
	-113.97	-13.33	-16.89	-7.94
Province FE	NO	NO	NO	YES
Observations	7,136	7,136	7,136	7,136
R-squared	0.003	0.034	0.042	0.057
r2_a	0.00335	0.0329	0.0409	0.0515
F	18.55	40.45	40.35	11.73
LM statistic	2947.423	1223.152	1114.393	1097.433
	0	0	0	0
F statistic	5020.06	1474.73	1318.963	1289.79

Note:*** p<0.01, ** p<0.05, * p<0.1

Stage 1: In the first stage regression, we observed a significant positive correlation between the importance of the Internet as an information source and the likelihood of engaging in online shopping. This association held true across all four models, with the most pronounced result found in the model

incorporating provincial fixed effects (whether online shopping or not (4)), where the coefficient was 0.1023, with a significance level of 0.01. This implies that households valuing the Internet as a vital information channel are more inclined to opt for online shopping.

Stage 2: In the second stage of regression, we identified a positive correlation between online shopping and household consumption structure, which was statistically significant in all four models. Specifically, in the model encompassing provincial fixed effects (consum (4)), the coefficient was 0.1000, with a significance level of 0.01. This indicates that households that choose online shopping tend to exhibit a relatively higher consumption structure, aligning with the findings from our earlier multiple linear regression analysis.

In summary, our instrumental variable regression analysis reveals that household consumption structure is influenced by several factors. Notably, whether online shopping, marital status, the health status of household members, the presence of patients, and other factors have a significant positive impact on family consumption structure. In contrast, age and Ln per capita income exert a significant negative influence. Additionally, the influence of education level and confidence in the future on household consumption structure appears to be relatively weaker. These findings hold significant implications for comprehending household consumption behavior and the factors that shape it.

Table 3: Propensity score matches results.

Matching method	Treatment group	Control group	ATT	Standard error	T value
4 nearest neighbor matching	0.398	0.354	0.043	0.011	3.92
Radius matching	0.399	0.354	0.044	0.01	4.15
Nuclear matching	0.399	0.355	0.044	0.01	4.09

All three matching methods revealed notable distinctions between the treatment group and the control group, signifying a significant treatment impact. While there are minor variations in the values of the average treatment effect (ATT) across the three methods, they consistently fall within the range of 0.043 to 0.044, underscoring the robustness of the treatment effect estimates. Furthermore, in all three methods, the T-value surpasses 1.96, affirming the significance of the treatment effect.

Table 4: Heterogeneous analysis results.

VARIABLES	consum(1)		consum(2)		consum(3)		consum(4)	
	towns	village	towns	village	towns	village	towns	village
onlsho	0.0602***	0.0108	0.0553**	0.0193	0.0593**	0.0260*	0.0585**	0.0378**
	-8.71	-0.89	-6.19	-1.4	-6.56	-1.89	-6.49	-2.72
marsta			0.0788**	0.0808**	0.0772**	0.0811**	0.0764**	0.0800**
			-7.94	-6.8	-7.75	-6.85	-7.66	-6.72

Table 4: (continued).

health			0.0161* **	0.0281* **	0.0074*	0.0183* **	0.0082* *	0.0197* **
			-5.42	-9.36	-1.87	-4.16	-2.1	-4.48
edu			0.0056* **	-0.003	0.0074* **	-0.0018	0.0080* **	-0.0014
			-2.65	(-1.25)	-3.36	(-0.76)	-3.65	(-0.58)
confid			0.0011	0.0056*	0.0023	0.0062*	0.0017	0.0056*
			-0.37	-1.7	-0.74	-1.88	-0.56	-1.69
patient					0.0382* **	0.0382* **	0.0393* **	0.0311* *
					-3.23	-2.98	-3.33	-2.41
aveinc					- 0.0064* *	- 0.0131* **	-0.0021	- 0.0104* **
					(-2.41)	(-4.47)	(-0.75)	(-3.45)
age			- 0.0009* **	- 0.0011* **	- 0.0009* **	- 0.0014* **	- 0.0009* **	- 0.0010* **
			(-3.84)	(-4.04)	(-3.65)	(-4.97)	(-3.72)	(-3.42)
Constant	0.3388 ***	0.3957* **	0.2460* **	0.2754* **	0.3165* **	0.4200* **	0.2152* **	0.3117* **
	-86.83	-98.42	-10.96	-11.13	-9.8	-11.32	-5.21	-3.66
Province FE	NO	NO	NO	NO	NO	NO	YES	YES
Observatio ns	3,745	3,293	3,745	3,293	3,745	3,293	3,745	3,293
R-squared	0.02	0	0.046	0.041	0.05	0.049	0.076	0.068
r2_a	0.0196	-6.30E- 05	0.0442	0.0388	0.0481	0.0469	0.0666	0.0587
F	75.82	0.792	29.86	23.17	24.63	21.27	8.226	7.043

Note:*** p<0.01, ** p<0.05, * p<0.1

It's evident that the sample in this study is segregated into urban and rural categories, with separate regression analyses conducted for each subset. This allows us to scrutinize whether there is a notable distinction in the influence of online shopping on consumer behavior between urban and rural residents.

In consum (1), the coefficient for online shopping among urban residents stands at 0.0602 (significant at 1%), while rural residents exhibit a coefficient of 0.0108 (insignificant). This implies

a substantial positive correlation between online shopping and consumption in urban areas, whereas this correlation is not significant in rural regions.

Moving on to *consum* (2), where we introduce the marital status control variable, the online shopping coefficient for urban residents is 0.0553 (significant at 1%), and for rural residents, it's 0.0193 (insignificant). In this model, a significant positive link between online shopping and urban consumption persists, while it remains insignificant in rural areas.

In *consum* (3), we further incorporate control variables like health, education, and confidence in the future. The online shopping coefficient for urban residents is 0.0593 (significant at 1%), and for rural residents, it's 0.0260 (significant at 10%). In this model, the significant positive correlation between online shopping and consumption endures among urban residents, while it becomes significant, albeit at a lower significance level, in rural areas.

Lastly, in *consum* (4), we introduce the provincial fixed effect. Here, the online shopping coefficient for urban residents is 0.0585 (significant at 1%), and for rural residents, it's 0.0378 (significant at 1%). In this model, the significant positive correlation between online shopping and consumption prevails among urban residents, while in rural areas, the significance of this relationship strengthens.

From the four models, it's evident that a significant positive correlation between online shopping and urban consumption consistently exists. In rural areas, with the incorporation of additional control variables and provincial fixed effects, the relationship between online shopping and consumption gradually becomes significant. This suggests that the impact of online shopping on consumer behavior may vary across different regional contexts.

5. Conclusion

Drawing on data from the 2018 China Household Tracking Survey (CFPS), this study empirically examines the influence of online shopping on household consumption structure. The research findings indicate the following:

Online shopping exerts a discernible impact on household consumption structure, fostering an increase in the proportion of development and enjoyment expenditures within the overall spending.

The influence of online shopping on the household consumption structure differs between urban and rural consumer groups. Enjoyment expenditures reflect residents' consumption ideas and preferences, which are integral to future development. Conversely, development expenditures are intricately linked to income levels and have a noteworthy effect on residents' consumption structures.

Consequently, it is imperative for governmental bodies to accelerate the establishment of a secure and dependable information infrastructure to ensure the stable and orderly growth of the online shopping market. Simultaneously, online shopping platforms should be encouraged to innovate their product and service models and facilitate the deep integration of the Internet with the real economy. Furthermore, efforts should be directed towards enhancing awareness of online shopping security and fortifying the development of laws and regulations governing the online shopping market, ultimately standardizing its operations.

In this era of online shopping, consumption is expanding in terms of scope and dimension, and consumer culture is becoming more diverse and inclusive. Therefore, aligning with the evolving landscape of our nation's social development and drawing from our traditional culture, it is imperative to construct a culture that guides individuals in the pursuit of a better life, embodying principles of "fairness" and "subjectivity" in consumption. This approach aims to grant people both material contentment and spiritual fulfillment through their consumption experiences.

Promoting and popularizing Internet usage, along with enhancing household online shopping and payment practices, can assist China in surmounting consumption barriers and mitigating the repercussions of economic uncertainties on household consumption in uncertain economic conditions.

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Protection of Well-Known Trademarks under the Internet

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Abstract: As the digital age advances, many trademark registrants have utilized the Internet as a medium to increase the visibility of their trademarks and brands, thereby obtaining greater benefits compared to traditional methods of trademark display, such as physical advertisements and television broadcasts. However, the Internet has also expanded the forms of trademark infringement while breaking down the territorial protection limitations of traditional trademark rights. Well-known trademarks, due to their own popularity and prominence, make them the first target of intellectual property infringement in the Internet environment. And due to the lag in legislation, the trademark infringement caused by the Internet will encounter obstacles in the process of defending rights. Therefore, this paper analyzes the protection of well-known trademarks in the context of the Internet by means of theoretical analysis and overview analysis. At the same time, it takes the problems expected in the protection of well-known trademarks in China as an example and provides corresponding measures to solve the problems. Relative protection is adopted for unregistered well-known trademarks, and with their own higher goodwill and trademark value, well-known trademarks should be given special protection. Extending the protection of well-known trademarks to the network environment is the inevitable development trend of well-known trademark protection.

Keywords: Well-Known Trademarks, Trademarks Infringement, Internet, Anti-dilution protection

1. Introduction

The earliest concept of well-known trademark originated from the Paris Convention, which added the protection clause for well-known trademarks in 1925. To a certain extent, the protection of trademarks breaks through the territorial limitation, and the protection clause states that after any one of the member states of the Paris Convention confirms it, it is effective in the transnational of the member states of the Paris Convention. However, the Paris Convention does not define how to judge whether a trademark is a well-known trademark. In 1999, the WIPO Joint Recommendation made specific provisions on the factors to be considered in determining whether a trademark is well-known, such as the degree of knowledge or awareness of the trademark in the relevant public, the duration and scope of the use of the trademark, the trademark's advertisement and publicity, the value of the trademark, and other specific reference factors, which made the certification of well-known trademarks operational [1]. The WIPO Joint Recommendation defines the relevant public not only as consumers of the goods for which the mark is used, but also as persons involved in the distribution of

the goods by the merchant or in the distribution channel [1]. At the same time, the WIPO Joint Recommendation broadens the scope of protection of well-known marks to include "conflicting logos, corporate logos, or domain name conflicts" [2]. Although there is no clear definition of well-known trademark in the international arena, it is generally believed that well-known trademark refers to a trademark that enjoys more business in the market after a long period of use and is well-known among the public [3]. The current trademark laws of various countries provide for the traditional protection of trademarks or registration as a prerequisite for obtaining the qualification of protection, but the general international protection of well-known trademarks is generally not based on the prerequisite of registration [1]. At the same time, the traditional principle of trademark protection is to preserve the attributes of the trademark that identify the source of the goods, thus preventing consumers from being confused with it. On the other hand, the principle of well-known trademark protection is to protect the efforts made by the trademark owner in establishing and operating the well-known trademark, and to protect the goodwill and value of the trademark itself, which are higher than those of an ordinary trademark, from the standpoint of the trademark owner. Therefore, the protection of well-known trademarks, unlike ordinary trademarks, does not require the infringement to occur in the same or similar field, i.e., infringement of well-known trademarks may also occur in non-competitive fields.

With the advent of the digital age, the economy has ushered in a new wave of development opportunities. Consumers can absorb more information about goods through the Internet, and the range of goods available to them has greatly increased. For this reason, many trademark registrants can use the Internet as a medium to enhance the visibility of their trademarks and brands and thus obtain greater benefits than traditional trademark display methods, such as physical advertisements and television broadcasts.

However, the Internet has also brought disadvantages to the protection of trademarks that cannot be ignored, including the traditional trademark rights of territorial limitations. At the same time, the Internet has expanded the forms of infringement of trademarks, but due to the lag in legislation, the forms of infringement of trademarks caused by the Internet are either not covered by the traditional trademark law or it is difficult to obtain evidence and thus difficult to defend the rights of the phenomenon. The infringer, without the permission of the trademark owner, uses a similar trademark on the Internet, resulting in the dilution of the trademark and damage to the exclusive right to use the trademark. To a certain extent, the Internet gives infringers a certain degree of protection, as the Internet is an open platform and at the same time has a hidden nature. These characteristics make the existing technology not enough to accurately locate the trademark infringer on the Internet, and because of its wide coverage, it is also impossible to set up a unified regulatory body for the Internet to ensure a unified supervision of trademark infringement. and due to its wide coverage, it is also impossible to establish a unified regulatory body to ensure uniform supervision of trademark infringement on the Internet. As a result, it is difficult to obtain evidence of network trademark infringement. And well-known trademarks because of their own popularity and prominence, so that it becomes the network environment of the brunt of the infringement of intellectual property rights [4]. Therefore, this paper analyzes the protection of well-known trademarks in the background of the Internet by means of theoretical analysis and literature review, and the main angles of analysis include the influence of the Internet environment on the protection of well-known trademarks and the common infringement methods. In addition, the article chooses the protection of well-known trademarks in China as a specific case, and puts forward corresponding measures to solve the infringement of well-known trademarks in the Internet environment. The analysis can increase the attention of consumers and related personnel to the protection of well-known trademarks.

2. Well-known Trademark Protection in the Internet Environment

2.1. The Impact of the internet environment on the Protection of Well-known Trademarks

Since the last century, the Internet has been developing at an alarming speed, rapidly changing people's business habits. The Internet makes the use of trademarks break through the geographical limitations, many originally limited to a certain area of the well-known trademarks. This may be due to the Internet expanding the geographical nature of its popularity, but it has also caused a different range of countries within the trademark owner to hold similar or the same trademarks, causing conflicts, infringement, and other problems. At the same time, the recognition of trademarks, trademark protection standards, and jurisdiction of trademark protection are difficult to unify among countries, which will pose a certain degree of challenge to the existing trademark protection system.

2.2. The forms of trademark infringement

On the other hand, the forms of trademark infringement brought about by the Internet are also diversified. In addition, the traditional trademark law provides for several forms of trademark infringement, such as without the permission of the registrant, the unauthorized use of the same or similar trademarks for the same or similar products or services, the sale of goods infringing on the exclusive right to use the registered trademark, reverse counterfeiting, and so on. New forms of infringement brought about by the Internet may include infringement through keyword searches. At the same time, it may also cause trademark infringement through domain name squatting, domain name theft, and so on. In addition, there is also infringement of the enterprise's webpage design and even infringement of trademarks through third-party platforms.

2.2.1. Domain name

Domain name is the Internet user's address on the Internet, but consumers can also directly identify the source of goods with strong uniqueness and scarcity of identification [5]. Many companies recognize the importance of domain names in the internet age, and as a result, many types of domain name infringement have developed. For example, a brand may maliciously purchase a branded domain name that is similar to another brand's website and sell a similar category of goods, causing consumers to misunderstand the domain name and thus reap significant benefits from it. In addition, there is the phenomenon of domain name squatting [6]. The act of registering a domain name bearing the proprietary name or logo of an enterprise without the permission of the owner of the trade mark, so as to borrow another person's trade mark for profit. For example, in the case of Marks & Spencer v. One In A Million in the United Kingdom, the defendant registered "marksandspencer.com" as a domain name, and since Marks & Spencer itself is a registered trademark without the enterprise's permission, the defendant's act of registration constitutes infringement of the trademark. The defendant's registration constituted an infringement of the trade mark [7].

2.2.2. Keyword Search Infringement

Keyword searching is an effective way to quickly sift through the Internet and get the information you need. And keyword infringement includes infringement by infringers through keywords in advertisements. Advertisers use search engine service providers to buy other brands of keywords as their own push keywords, and consumers, through the search engine search for the original brand, may enter the infringer's brand or related products interface. Alternatively, when building their own websites not for descriptive and referential use but for deliberate use of keywords identical to or related to the well-known trade mark, users may see the infringer's website when searching for the

keywords of the well-known trade mark. For example, in the case of *Playboy v. Welles* in the United States, the cover girl of the defendant's website was chosen as Playboy's playmate of the year, and the website used the cover girl's photo and the term playmate of the year, and the header of the website also used playmate of the year. Playboy argued that the use of the word pmoy was an infringement of the trade mark. The District Court and the Court of Appeal held that the defendant's use of the word pmoy was an infringement of the trade mark because the keyword belonged to Playboy and had nothing to do with the defendant's web site, and that there was no necessity for the use of the word pmoy [8].

2.2.3. Web design infringement and third-party platform infringement

Web design is the information that a company wishes to convey to the outside world, including goods, services, and ideas. An infringer may use another's well-known trademark or logo or otherwise design a web page in a way that is misleading to consumers in an attempt to cause consumers to self-identify the well-known trademark with the web page in a way that is misleading as to its potential relationship. If without the permission of the original brand owner, other companies directly place the brand owner's products for sale on the third-party website trading platform, it will cause certain economic losses and reputational losses to the original brand owner.

2.3. Issues Applicable to the Protection of Well-known Trademarks in the Network Environment

The current trademark law for the protection of network trademark rights and the protection of the corresponding brand still has problems, although the traditional trademark law has made corresponding provisions on trademark infringement, but the network trademark infringement problem is not involved. When the Paris Convention was formulated, the Internet had not yet been vigorously developed, so the new form of infringement of well-known trademarks under the Internet did not make relevant provisions. Although the WIPO Joint Recommendation extends the scope of protection of well-known trademarks to conflicting logos, corporate logos, or domain name conflicts, the WIPO Joint Recommendation is not a binding provision and does not have a mandatory effect. In addition, the rapid development of the Internet environment, such as web page design, keyword search infringement, and other new forms of infringement, neither belong to the scope of goods nor services, whether the traditional rules of trademark law or the WIPO Joint Recommendation of the extension of the protection of the new forms of infringement are involved in the lack of systematic legislative protection.

In the face of new forms of infringement, national and international actions are being taken to protect well-known trademarks. The United States passed the Anti-Domainsquatting Consumer Protection Act in 1999 [9]. It provides a judgement standard for judicial authorities to determine whether domain name squatting is in bad faith, and at the same time protects the rights of bona fide registrants. At the international level, countries are also trying to establish new conventions to deal with the problem of infringement. For example, the Anti-counterfeiting Trade Agreement, which was opened for signature in 2011, sets out in section 5 the procedures for enforcing infringement of trademarks and copyrights in the digital environment, as well as the corresponding obligations of ISPs, and formally incorporates trademarks into the protection of trademarks in the digital environment [10]. But at the same time, ACTA has faced questions about its lack of privacy protection. Although ACTA has not yet come into force, it is still relevant to the protection of well-known trademarks under the Internet.

At present, international trademark infringement in the Internet environment is still focused on the dispute over domain names, and other forms of infringement have not yet introduced relevant rules,

which are basically taken by the domestic law of each country to regulate. However, there is also a form of international cooperation to face the Internet trademark infringement that has broken through the geographical limitations. For example, WIPO and other intellectual property protection organizations may cooperate with other countries. In 2011, they set up a joint dispute resolution procedure with the Intellectual Property Office of Singapore.

3. Problems and Measures for the Protection of Well-known Trademarks in China

China's current protection principle for well-known trademarks is to adopt absolute protection for registered well-known trademarks and relative protection for unregistered well-known trademarks [11]. China's current law for well-known trademarks and the theory of its trademark dilution problem are insufficient. They still adhere to the traditional theory of confusion, that is, the trademark to confuse consumers. Under this theory, the trademark infringement is based on the same or similar products because only the products that are the same or similar to the consumer will be confused. Although the current law incorporates the issue of well-known trademark infringement, it is still based on the traditional theory of confusion rather than the true theory of trademark dilution. The Trademark Law explicitly provides for cross-class protection of well-known trademarks, i.e., it does not require similarity of goods. However, due to the accumulation of time, the correspondence between well-known trademarks and their goods or services will be diluted, which will lead to the disappearance of the uniqueness of well-known trademarks, and this damage is not included in the scope of the law.

In order to enhance the protection of anti-dilution of well-known trademarks in China, the act of trademark dilution can be systematically regulated by a special chapter in the Trademark Law. As the Internet has increased the means of trademark dilution, the methods of dilution of well-known trademarks are far greater than those listed above. Therefore, while clearly listing the known means in the legislation, the openness of the law should be maintained. Meanwhile, it should also be clear under what circumstances the correct use of well-known trademarks is, such as non-commercial, legitimate, and other constraints. The law should also clarify the responsibility of the infringer. For example, the infringer should immediately stop the infringing behavior, such as stopping the use of the domain name, stopping the use of keyword implantation, and other behaviors. Secondly, if the infringing behavior is domain name squatting, the squatting domain name should be returned to the original brand. Thirdly, the amount of compensation should be given to the original trademark holder, and the amount of compensation should be evaluated on the basis of the consideration of the actual loss of the original registrant due to the infringing behavior. In order to further regulate domain name registrations, it is also possible to set up an opposition procedure and a registration grace period to allow the trademark owner to file an opposition, as well as to implement a regular review of domain name registrations.

The infringement caused by a third party is actually an indirect infringement of alternative infringement. The current legislation for indirect infringement is limited to indirect infringement to help infringement, for alternative infringement, the law is relatively vacant. It should be added to the trademark law for indirect infringement of the specific identification and indirect infringement of alternative infringement of the constitutive elements. In order to prevent a large number of indirect infringements by trademark registrants, there is no way to defend their rights. The public network trading platform should make detailed provisions for trademark infringement. At present, China's trademark law only focuses on the infringement of "notification - deletion" of the provisions, but not in detail, which makes the application of the law difficult. In this case, we can choose to make the "two notices" rule, that is, the trademark right holder in the discovery of network public trading platform has infringed on the trademark rights of goods, can notify the network public trading platform to delete the infringing products, and the platform can require the infringing products of the

right holder to provide evidence of compliance with the trademark, if the trademark right holder that If the trademark holder thinks that there is insufficient evidence, he can ask the platform to delete the infringing goods [12]. Such a provision can accelerate the speed at which trademark right holders can defend their rights as well as reduce their losses, i.e., they can protect themselves through the liability of the platform instead of going through a lengthy litigation process to get a judgment.

4. Conclusion

It is only a few decades since well-known trademarks were first included in the Paris Convention and nowadays, under the Internet, the drastic change of the Internet has made the original protection of well-known trademarks face difficulties in application not long after the initial stage, which is also due to the fact that the legislation itself has a lagging effect. In the face of the protection of well-known trademarks, both countries and international organisations are making new legislation or conventions in order to adapt to the new environment. With the development of time, the legislative protection of well-known trademarks in the Internet environment will have further development and progress. However, this paper only summarizes and discusses the articles from a theoretical perspective by way of review, lacks case studies, and focuses only on China. Later on, as enterprises and countries pay more attention to the protection of well-known trademarks in the Internet environment, the article can be discussed and summarized in a wide range of contents.

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An Empirical Analysis on the Feasibility of Financial Valuation of Technology Companies: A Fundamental Analysis Approach Based on Value Investing

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Abstract: This study addresses the significant challenge of accurately valuing internet companies in the contemporary business landscape, recognizing existing research gaps due to the limited applicability of conventional valuation methods such as Net Present Value (NPV) and Price to Earnings (PE) ratios in this emergent industry. This paper conducted a fundamental analysis based on the principles of value investing, utilizing 2022 financial data from thirteen internet companies listed in Forbes Global Technology companies. Key financial aspects, including liquidity, debt-servicing capacity, profitability, and shareholder returns, were meticulously analyzed. The findings reveal that internet companies face cash flow pressures impacting their liquidity. Despite a moderate long-term debt ratio, companies exhibit substantial reliance on debt financing, encountering difficulties in interest payments. While these firms demonstrate a capacity for profitability, they concurrently face intense competition and cost pressures. The market sentiment remains highly optimistic regarding the future prospects of internet companies, reflecting elevated valuations. In light of favorable market conditions, it is imperative for internet companies to strategically enhance competitive advantages, bolster core product competitiveness, and amplify profitability through innovative operational and marketing strategies, thereby augmenting their industry influence and societal impact.

Keywords: Financial Valuation, Value Investing, Technology Companies

1. Introduction

Due to the bursting of the Internet bubble in 2000 and the huge losses incurred by venture capital funds in Internet companies, how to make objective valuation of Internet companies has become an important issue in recent years. With the continuous development of time and economy, people have been searching for the most common and acceptable valuation method, but there is no answer that satisfies everyone so far. To understand the intrinsic value of an Internet business and the factors that create the value of an Internet business, it is necessary to use realistic and reasonable valuation methods, and academics and the business community have made a lot of efforts to solve this problem, such as quantitative valuation methods, for example, the multiples analysis and the discounted cash

flow analysis have been recognized as the classic methods of business valuation with a long history. However, these traditional techniques may not work for Internet valuation. The valuation of Internet companies often creates significant barriers due to their own technical difficulties and logical thinking [1]. Therefore, this paper focuses on using the concept of value investing to study the liquidity, solvency, profitability, and shareholders' returns of Internet companies, exploring the dependence of Internet companies on capital flows based on the relationship between cash ratios; observing their dependence on financing and the level of interest payments from the overall debt level of Internet companies; exploring the costs and revenues of Internet companies from their costs and revenues of Internet companies, it will explore the balanced relationship between them; and then analyze the business status of the companies from their average turnover ratio, ROE, ROA, and market conditions. Based on the fundamentals of Internet companies, this paper will make valuation and investment decisions. Value investing strategies are common in practice and academia, and value investing is widely used in practice due to the achievements of world-class investor Warren Buffett [2]. Fundamental analysis, on the other hand, evaluates a company's financial position by analyzing financial indicators, calculating the intrinsic asset value and comparing it with the market price to provide a target price for the asset [3]. In a general sense, it assesses the financial position of companies and projects in terms of future results by determining the price closest to the real value of the stock, which is based on three pillars: (i) analysis of the company or asset; (ii) analysis of the industry and market; and (iii) analysis of economic and financial indicators. The important role of economic behavior in both micro and macroeconomic terms is also considered [4]. This will help future value investors to be protected from the negative effects of short-term market volatility and market noise, and to focus more on the long-term value of companies.

Based on the 2022 Forbes List of the World's Largest Technology Companies, this paper selects 13 Internet companies that meet the requirements of this paper and analyzes them in detail in an attempt to simply establish a valuation methodology for the Internet industry as a whole. During the period of the Internet bubble, scholars claimed that the relevance of financial and accounting information to market valuation declined, and this form seems to have been reversed after the bubble burst [5]. Based on the special characteristics of Internet companies with few tangible assets and most of them are difficult to make profits, this paper divides the content of fundamental analysis into four segments, analyzing various indicators such as the company's liquidity ratios, solvency ratios, profitability ratios, and investment ratios, and researching industry. The overall trend of the industry is studied.

2. Liquidity Performance

The current ratio is a financial ratio that measures the short-term solvency of a business, and it usually compares a business's current assets with its current liabilities. This ratio provides investors and creditors with a quick and testable way to assess the financial health of a business. Based on Table 1, it can be seen that the Internet industry generally has a high current ratio, which represents that they have more than sufficient funds to cover their short-term debts. This will result in Internet companies being able to have more cash and liquid assets as they are more likely to attract venture capital (VC/PE) due to their own active financing. Secondly, Internet companies are capital light (low fixed capital investment) compared to traditional manufacturing and retailing, in which the business model eschews large amounts of fixed capital such as land, machinery and buildings. Instead, they focus more on talent, technology and innovation, which helps the company improve its flexibility and ability to adapt to the market, which is why it shows a higher current ratio. Analysis according to Table 1 can be found, Sohu and Weibo's current ratio is particularly high, even beyond 3 times, which on the one hand reflects the financial stability of the company, but on the other hand also means that the company has a large amount of money idle, not being fully utilized. In its 2022 annual report,

Weibo mentions that although the Group does not currently require dividends, deposits and advances from subsidiaries in the People's Republic of China, VIEs and subsidiaries of VIEs to provide liquidity and other financing purposes [6]. The Group may require additional cash resources from subsidiaries. VIEs and subsidiaries of VIEs in the People's Republic of China in the future due to changes in its business conditions for future acquisitions and developments or simply to declare and pay dividends or make distributions to its shareholders. As of December 31, 2022, the Group is restricted in the amount of US\$566.9 million, representing 16.7% of the Group's total consolidated net assets. Sohu noted in its 2022 annual report that of its cash and cash equivalents, US\$506.5 million was deposited in financial institutions in mainland China and US\$191.3 million was deposited in financial institutions outside mainland China [7]. They believe that their current liquidity and capital resources are sufficient to meet anticipated working capital requirements, commitments, capital expenditures and investing activities for at least the next twelve months. However, they may require additional cash resources due to changes in business conditions and other future developments, or changes in general economic conditions (details in item 3). Amazon and Apple on the other hand show low current ratios, their current ratios are 0.94 and 0.88 respectively, which means that the business does not have enough funds to pay off short-term debt, which might lead to financial risk for the business. In Amazon's annual report, it can be learned that the capital expenditures for 2022 are \$58.3 billion, which is an increase of 29% year-on-year compared to 2021's 55.4 billion [8]. An increase of \$2.9 billion year-over-year, primarily reflecting investments in technology infrastructure (much of which is being used to support the growth of the AWS business) and additional capacity for the company's fulfillment network. And Amazon used cash on hand to fund the acquisition of MGM Holdings, Inc. and is expected to use cash on hand to fund the acquisitions of 1Life Healthcare, Inc. (One Medical) and iRobot Corporation. Apple, for its part, disclosed in its annual report that Apple has a balance of \$156.4 billion in cash, cash equivalents, etc., but that the company is exposed to credit risk and volatility in the value of its investment portfolio [9]. Although the Company has not realized any significant losses on its cash, cash equivalents, and marketable and non-marketable securities, future fluctuations in their value could result in significant losses and could have a material adverse effect on the Company's results of operations and financial condition. Also, the downturn in the economic environment has led to an increase in the riskiness of collecting the company's trade receivables, reducing its current ratio.

The quick ratio represents a company's ability to pay its current obligations from their company's most liquid assets without relying on selling inventory. It evaluates whether a company can afford to pay off its short-term debt without selling inventory. The Internet industry generally has high velocity ratios, which represents their ability to pay off short-term debt even after subtracting inventory, reflecting the fact that this industry generally has a better ability to pay off debt in the short term. Interestingly, by comparing the speed ratios and current ratios of the above Internet companies, it is surprising to find that there is little difference between the two, with only a few companies having speed ratios that are slightly lower than their current ratios. This phenomenon can again indicate that the Internet industry has less inventory and the related companies have a higher degree of flexibility and market adaptation. According to Table 1, it can be seen that the companies with the highest current ratios - Weibo and Sohu - also have the highest speed ratios, and surprisingly these two companies have current ratios equal to their speed ratios, which means they have no relevant inventories. Apple and Amazon also have lower quick ratios because of their own poor current ratio numbers. It is worth noting that the difference between the quick ratio compared to the current ratio for the two companies, Jingdong and Amazon, is due to the fact that these two companies are e-commerce companies, which provide online sales and delivery of goods through an internet platform, and therefore, they will have a relatively large amount of inventory. In Jingdong's annual report for 2022, it is concluded that there is a significant increase in their inventory from RMB 58,933 million

on December 31, 2020 to December 2021 31, 2021 to RMB75,601 million and further to RMB77,949 million (US\$11,302 million) as of December 31, 2022, which represents 13% of total assets [10]. Part of the reason for the large amount of net inventory is that some of the merchandise is stagnant or damaged, which relates to issues such as the effects of aging inventories, historical and forecasted consumer demand, and pricing affecting the causes of market conditions.

The cash ratio is a relatively conservative ratio for assessing a company's liquidity because it does not take into account other assets that can be used to pay down debt, where "cash" usually includes cash and cash-equivalent investments, such as short-term investments that can be liquidated quickly in the marketplace. According to Table 1, it can be seen that the Internet industry generally has a low cash ratio, basically no more than 1, compared with the first two ratios, it can be seen that most of the liquidity of the Internet business is not cash. And in response to the phenomenon of higher current ratio and lower cash ratio, it can be concluded that companies are more inclined to reinvest cash in their business to support growth and expansion, or may be more investment in certain non-cash current assets. As a result of a low cash ratio and a high current ratio, for Internet companies this could include prepaid advertising costs, partner payments, or other expenses related to operations. But a low cash ratio could also mean some cash-flow pressure on the company when faced with unexpected expenses or investment opportunities. The same goes for Weibo and Sohu, two companies whose cash ratios are still remarkably high compared to other competitors in their industries. Weibo stated in their 2022 annual report that their ability to repay principal and pay interest on their debt depends on their ability to manage business operations, generate sufficient cash flow, raise additional capital and other factors [6]. They may not be able to meet their payment obligations if they are unable to obtain financing on a timely basis or on commercially acceptable terms. They may incur additional debt in the future, which requires them to have sufficient cash flow.

Table 1: Liquidity ratios for technology companies.

Stock code	Current ratio	Quick ratio	Cash ratio
BABA.N	1.67	1.59	0.58
BIDU.O	2.67	2.67	0.81
JD.O	1.31	1.02	0.37
NTES.O	2.31	2.30	0.53
SOHU.O	3.18	3.18	1.84
WB.O	3.73	3.73	2.96
GOOGL.O	2.38	2.34	0.90
AMZN.O	0.94	0.72	0.62
TCEHY.OO	1.30	1.30	0.53
AAPL.O	0.88	0.85	0.35
MPNGF.OO	1.87	1.86	0.29
NFLX.O	1.17	1.17	0.77
MSFT.O	1.78	1.75	0.61

3. Solvency Performance

Gearing ratio is usually used to measure a company's financial leverage, which can be used to derive how much of the company's assets are exchanged through borrowing, and it can assess the company's financial risk. According to Table 2, it can be seen that the overall gearing ratio of Internet companies is as high as 50%, which to some extent reflects the companies' reliance on debt financing. Generally speaking, Internet companies are recognized as a high-growth industry, in order to achieve the goal of rapid expansion and capture market share, companies will use more aggressive financial strategies,

and due to the rapid rate of innovation in the Internet industry, companies may need to continue to invest in research and development, which will lead to a tendency to debt financing. According to Table 2, Amazon and Apple have high gearing ratios of 68.44% and 85.64% respectively, which represents that the two firms have high debt burdens. According to Apple's annual report, as of September 24, 2022, Apple had a total of \$111.8 billion in fixed rate notes (collectively, the "Notes") outstanding as of September 24, 2022, of which \$11.1 billion is repayable within 12 months [9]. Future interest payments related to the Notes total \$41.3 billion, of which \$2.9 billion is payable within 12 months. Apple also issues unsecured short-term promissory notes (Commercial Paper) under the Commercial Paper Program. As of September 24, 2022, the Company had \$10 billion of commercial paper outstanding, all of which must be paid within 12 months. Amazon, on the other hand, notes in its 2022 Annual Report that the Company's 2021 and 2022 payments from short-term debt and other long-term debt to generate cash inflows of \$27 billion and \$62.7 billion, respectively [8]. This is a significant portion of the company's debt. And a significant portion of this cash is used for share repurchases, payments on short-term debt, long-term debt, finance leases and financing obligations. The company says there is significant uncertainty about future cash needs and cash flow projections. The Company continually evaluates opportunities to sell additional equity or debt securities, obtain credit facilities, obtain financing and operate lease arrangements, enter into financing obligations, repurchase common stock, pay dividends or repurchases, refinance or otherwise restructure debt. At the same time, economic conditions and actions by policy-making bodies have resulted in higher interest rates and significant volatility in the capital markets. This, along with an increase in the company's borrowing levels, could increase the company's borrowing costs in the future. Google only has a 29.87% gearing ratio, which means that Google is a company with a healthier and more conservative financial structure relative to other internet companies, while having more self-capital. Google notes in its 2022 annual report that the company classifies its assets, and the company classifies effective maturities of three months or less from the date of purchase of Transferable debt securities are classified as cash equivalents, while securities with effective maturities greater than three months are classified as transferable securities [11]. After considering risk and return objectives and liquidity requirements, the company may sell these debt securities prior to their effective maturity dates. At the same time, the company records these securities at fair value and reports unrealized gains and losses, net of tax, as a component of shareholders' equity. Changes in the fair value of certain negotiable debt securities are recorded in other income (expense). And for certain market transferable debt securities, the company selects the fair value option. All of the above contributes to maintaining a low debt ratio.

The long-term gearing ratio indicates how much of a company's assets are backed by long-term liabilities (bonds, long-term borrowings, etc.). Based on Table 2, it can be concluded that the long-term gearing ratio for the Internet industry as a whole is not that high, averaging 23%. Relative to other industries, this is a moderate ratio, showing that companies have some debt but are not overly reliant on external financing. Apple and Netflix, on the other hand, are two companies with high long-term gearing ratios, at 41.98% and 40.92%, respectively. Apple noted in its annual report that total combined long-term debt was \$111,824 million as of September 24, 2022, and that to manage interest rate risk on certain U.S. dollar-denominated fixed rate notes [9]. The company entered into interest rate swaps that effectively convert the fixed interest rates on these notes to floating rates. In addition, to manage foreign exchange risk on certain foreign currency denominated notes, the company entered into foreign exchange swaps that effectively converted these notes to U.S. dollar denominated notes. Netflix explained in its Annual Report 2022 that as of December 31, 2022, the company had a total outstanding notes ("Notes") balance of \$14,353 million, less issuance costs of \$79 million, with various maturity dates [12]. Netflix has its future capital needs, and as the company expects its future capital needs from the debt markets to be more limited than in previous years, it is preparing to raise

additional funds through the issuance of equity and debt securities. These securities may have rights superior to those of the common stock, being able to have more preferences and privileges. NetEase has a long-term gearing ratio of only 4.09% in 2022, according to NetEase's annual report, NetEase received net proceeds of RMB4,845.0 million (US\$702.5 million) from short-term and long-term loans in 2022 [13]. The net cash outflow from financing activities was mainly due to NetEase's repurchase of its American Depositary Shares (ADSs) and purchase of shares of its subsidiaries, as well as dividend payments to shareholders and non-controlling shareholders, while there were net proceeds from short-term and long-term loans, but these proceeds partially offset the cash outflow from share repurchases and dividend payments. Finally, all of the above resulted in less long-term debt due to the existence of multiple loan agreements between NetEase and Youdao, even though the original terms of the loans were shorter, as well as the fact that the actual amount of long-term loans utilized was relatively small despite the availability of a revolving loan facility to support Youdao's long-term growth.

The EBITDA multiple is used to measure the profitability of the company as well as its ability to pay interest. According to Table 2, it is concluded that the Internet industry generally has a low EBITDA multiple, which represents that the company is not very profitable and may face difficulties in paying interest. Meituan's EBITDA multiple in 2022 is -3.68, which represents one year of earnings in the U.S. that is not enough to cover its interest payables [14]. Meituan attributes the higher interest payable to the fact that the time value of money and risks specific to the obligation are taken into account in the measurement of withholding, which are reflected through interest rates, resulting in an increase in interest expense. Interestingly, MMT additionally elaborates on how an organization recognizes and measures provisions (provisions) for liabilities, particularly legal or constructive obligations related to past events, and MMT's higher interest payable is due to the fact that the measurements of provisions take into account the time value of money and the risks specific to the obligation, which leads to an increase in the provision and the recognition of the corresponding interest expense. Microsoft exhibits a surprisingly high EBITDA multiple of 40.58 among many Internet companies. In Microsoft's annual report, it can be learned that in 2022, the company's interest payments are \$1.9 billion, that changes in interest rates may have a direct impact on interest expense due to the use of the company's interest rate swaps and other financial contracts [15]. The company's use of a hedging strategy may affect the company's financial performance, particularly in relation to the portion of interest expense. Finally, interest expense accrued as a result of uncertain tax positions could directly impact the Company's earnings, thereby increasing the EBITDA multiple.

Table 2: Solvency ratios for technology companies.

Stock code	Total debt ratio	Long-term debt ratio	Times-interest-earned
BABA.N	36.17%	13.54%	3.59
BIDU.O	39.17%	18.81%	2.33
JD.O	53.95%	9.17%	6.58
NTES.O	36.98%	4.09%	N/A
SOHU.O	43.84%	22.76%	N/A
WB.O	52.44%	35.33%	1.32
GOOGL.O	29.87%	10.90%	N/A
AMZN.O	68.44%	34.85%	-1.93
TCEHY.OO	50.39%	22.88%	21.19
AAPL.O	85.64%	41.98%	40.67
MPNGF.OO	47.36%	16.09%	-3.68
NFLX.O	57.24%	40.92%	7.98
MSFT.O	54.35%	28.29%	40.58

4. Profitability Performance

Net Profit Margin is a financial ratio that measures a company's profitability and provides creditors with insight into the efficiency and profitability of a company's operations by showing how much of each unit of a company's sales revenue is retained as net profit. By looking at the net profit margin, the company can assess the effectiveness of its business strategy and operational strategy efficiency and adjust accordingly. According to Table 3, it can be seen that the general net profit margin in the Internet industry is 12.6%, which is an interesting figure, in general, Internet companies have relatively low fixed costs but invest more in technology development and personnel, this average net profit margin may reflect the efficiency of individual companies in controlling their operating costs, which suggests that the Internet companies are able to achieve profitability to a certain extent, however are also facing competitive and cost pressures. Tencent Holdings and Microsoft have the highest net profit margins, at 34.03% and 36.69% respectively. A higher net profit margin, which can effectively convert sales revenue into net profit, indicates a stronger competitive position in the market and also reflects a company's ability to control costs. According to Microsoft's annual report, it can be seen that the net income increased by 19% from \$61,271 million to \$72,738 million [15]. It indicates that the company's sales are performing well and the market demand is strong. Also, net income and diluted EPS for the year were positively impacted by the net tax advantage associated with the transfer of intangible assets. Interestingly, the Supreme Court of India ruled in favor of the company, holding that software sales are not subject to withholding tax, and Microsoft has further effectively reduced its tax burden by producing and distributing its products and services in foreign jurisdictions (e.g., Ireland) at a lower tax rate. Tencent mentioned in its annual report that the company took measures to further reduce loss-making operations and optimize its cost structure [16]. This helped improve the company's overall profitability. At the same time the company is focusing on self-developed PaaS (Platform-as-a-Service) solutions with healthier profit margins, such as audio and video clouds and databases. This shows that the company is selecting and growing its business with a greater focus on its profitability. Finally the company offers solutions that help automakers enhance their IT infrastructure and product offerings, such as customized smart cockpit solutions, digital maps, and data management. This may help the company to increase the value and attractiveness of its services, which in turn increases profits. Sohu and Meituan, on the other hand, did not have good net profit margins, at -2.30% and -3.04%, respectively. Sohu's 2022 annual report reveals that the company's net loss from continuing operations in 2022 was \$17.3 million [7]. The net loss attributable to Sohu.com Limited was relatively high in 2022, which suggests that Sohu faced some financial pressure during the year. It is also known that Sohu's net income rate was impacted by its investments in Changyou and Sogou, equity plan modifications and other related matters. The equity plan modification and merger of Long Tour and the fact that Sohu no longer holds an equity stake in Sogou are important factors that affect Sohu's net income and net income ratio. The presence and variability of these factors increases the complexity of Sohu's net income (net loss) and affects its net income ratio. In its annual report, an increase in gross profit from its food and beverage takeout and Meituan flash sales businesses [7]. However, this increase was offset by lower profits in the hotel and travel business. Meanwhile the epidemic led to fewer customers visiting stores, which may have affected the company's overall profits. And Meituan revealed in a sidebar that the company is working to reduce costs and expenses across all of its businesses and improve operational efficiency. This suggests that the company may be facing some challenges in controlling costs. The operating loss of Meituan's new business unit decreased from RMB9.4 billion in the fourth quarter of 2021 to RMB6.4 billion in the same period of 2022, which is an improvement, narrowing 36.8 percentage points year-on-year from 75% to 38.2%, but is still high enough that even with cost reductions and operational

efficiencies in the merchandise retailing business, the company will not be able to turn around its profitability.

Operating margin represents a company's ability to generate profits from its core business. According to Table 3, it can be seen that the average operating margin in the Internet industry is 15%, which represents the viability and robustness of the business model of most Internet companies, and also shows that most Internet companies do an excellent job of controlling their operating costs, and are able to maintain a reasonable balance between revenues and costs. Microsoft's operating margin is as high as 42.06% in its annual report that the Operating Income in 2022 is \$83,383 million, and from their business analysis [15]. The revenue of each business unit, especially the "Intelligent An analysis of the company's business shows that all business segments, particularly the "Intelligent Cloud" segment, are experiencing significant revenue growth. The diversified business structure, which includes Productivity and Business Processes, Intelligent Cloud, and Personal Computing, helps to diversify risks and achieve stable revenues and profits. Profitability. Microsoft has invested in high-margin business areas such as cloud engineering, LinkedIn, and gaming, where the return on investment is likely to be high. Finally, thanks to Microsoft's effective management of costs, this has maintained high operating margins. Meituan's operating margin is similar to its net profit margin, again one of the lowest among the companies researched at -3.81%. In their annual report, Meituan states that operating profit received a degree of negative impact in 2022 due to the macroeconomic environment, with operating margins in the core local commerce segment [14]. The operating profit margin of the core local business segment declined from 16.6% to 3.5%, or 20.1% YoY, while the operating loss margin of the new business segment narrowed from 38.2% to 3.4%. As noted in the article, the operating loss of the bike-sharing and tram-sharing business increased due to seasonal factors, which may be due to the fact that people are less likely to use bike-sharing during the winter or rainy season. Finally, even though the operational efficiency of the merchandise retailing business has been improved and the operating loss ratio of the new business unit has been improved, it still cannot turn around, representing a degree of immaturity in the business model, meaning that the company is at a higher risk in the face of changes in the market.

Asset turnover, a financial ratio that measures how effectively a company utilizes its assets to generate sales revenue, can help investors understand the operational efficiency of a company, especially in using its assets to drive sales and revenue. According to Table 3, it can be seen that the average asset turnover ratio of the Internet industry is 0.73, which is a surprising value because it is a bit too low compared to other industries. As an industry that requires constant technological upgrades and innovation, it requires consistently higher R&D investments, which take a lot of time to translate into sales revenues, and due to intense competition, companies need to keep investing in order to gain market share and users. Jingdong has a considerably higher asset turnover ratio than other Internet companies, as high as 1.91, and its annual report shows that its inventory turnover days in 2022 will be 33.2 days, which indicates that the company takes an average of 30-33 days to sell and replace inventory in a year [10]. This indirectly shows that the company is doing better in using its assets (inventory) to generate sales. Similarly, asset turnover is not directly mentioned in the text, but the issue regarding the operational efficiency of the company is discussed in detail through the metrics such as accounts payable turnover days, accounts receivable turnover days, etc. the company's accounts payable turnover days have increased, from 47.1 days in 2020 to 52.5 days in 2022. This means that the company has more time to pay its vendors without having to utilize its cash flow prematurely, which may help maintain a high asset turnover ratio. The company's accounts receivable turnover days have increased, but remain relatively low (2.7 days in 2020 and 4.5 days in 2022). This indicates that the company is able to collect its accounts receivable quickly, which helps maintain liquidity and high asset turnover.

Table 3: Profitability ratios for technology companies.

Stock code	Profit margin	Operating margin	Asset turnover
BABA.N	5.52%	11.11%	0.50
BIDU.O	6.09%	12.87%	0.32
JD.O	0.93%	1.75%	1.92
NTES.O	20.56%	20.34%	0.59
SOHU.O	-2.30%	-0.12%	0.35
WB.O	5.33%	26.72%	0.25
GOOGL.O	21.20%	26.46%	0.78
AMZN.O	-0.53%	2.38%	1.16
TCEHY.OO	34.03%	18.04%	0.35
AAPL.O	25.31%	30.29%	1.12
MPNGF.OO	-3.04%	-3.81%	0.91
NFLX.O	14.21%	17.82%	0.68
MSFT.O	36.69%	42.06%	0.57

5. Investment Performance

ROE, or Return on Equity, is a financial indicator that measures a company's profitability and indicates how much profit a company is able to generate with its own capital. As can be seen in Table 4, the average ROE for the Internet industry is 24.9%, but the variance is extremely high and the gap between companies is too large. Apple has the highest ROE of 175.4%, which means that Apple manages efficiently and is able to get more out of its limited resources. Apple states in its annual report that when the company repurchases stock it pays for it using cash or equivalents, which can directly reduce the company's assets [9]. Since stockholders' equity equals assets minus liabilities, a decrease in assets leads to a decrease in stockholders' equity. At the same time, a stock repurchase also reduces the "shares outstanding" or "treasury stock" account, which is also part of stockholders' equity. Therefore, this also leads to a decrease in stockholders' equity. While a decrease in average shareholders' equity is one aspect of an increase in ROE, a decrease in assets is not necessarily a positive sign, and may be behind a company's hidden financial risks. By comparing Apple's financials for the previous two years, it can be seen that the company's total revenues are increasing each year, with total net sales of \$27,451.5 million in 2020, \$36,581.7 million in 2021, and \$39,432.8 million in 2022. Apple's revenue increase is due to the strong performance of its various product lines, as well as its successful marketing strategy to realize net revenue increases in specific regions, such as Greater China. Meituan's ROE is only -5.2%, which is a relatively less impressive figure. Meituan's less-than-ideal net income for 2022 is constrained by a number of reasons as mentioned earlier, both of which indicate that the company is poorly run, resulting in high costs and lower profits.

ROA shows how effectively the company utilizes its assets to generate profits by comparing the company's net income to its total assets. According to Table 4, the Internet industry generally has an ROA of 9.6%, and although this average is not high when comparing ROE, the variance is much smaller, indicating that within the industry, companies are similar in their ability to utilize their assets to generate profits, and that firms are generally able to utilize their assets efficiently to generate revenue. Apple's ROA is also significant at 33.9%, and as mentioned earlier, net income has increased year over year due to strong performance across the company's product lines and successful marketing strategies in certain regions. The ROA of -2.4% for MMT, on the other hand, also represents the fact that this could mean that the company is facing difficulties in utilizing its assets to generate revenues and may need to review its business strategy and operational efficiency.

The P/E ratio is used to assess whether a company's market value is higher or lower than its book value. Investors can use the P/E ratio to identify stocks that may be undervalued or overvalued as a reference for investment decisions. According to Table 4, it can be concluded that the average P/E ratio of Internet companies is 6.9, which indicates that market participants are willing to pay 6.9 times the book value of the companies, which reflects the market's high regard for these companies and expectations for future growth. As the market is currently optimistic about the outlook for the Internet industry, this could also push up the overall P/E ratio for the industry. Apple has a far superior P/E ratio of 40.8%.

Table 4: Investment ratios for technology companies.

stock code	ROE	ROA	Market-to-book ratio
BABA.N	6.54%	4.37%	1.55
BIDU.O	3.48%	1.76%	1.23
JD.O	4.91%	2.54%	2.87
NTES.O	20.33%	14.86%	3.17
SOHU.O	-1.45%	1.10%	0.47
WB.O	2.47%	1.29%	1.36
GOOGL.O	23.62%	19.69%	4.46
AMZN.O	-1.92%	-1.03%	5.87
TCEHY.OO	24.64%	13.27%	3.91
AAPL.O	175.46%	33.88%	40.79
MPNGF.OO	-5.26%	-2.40%	7.30
NFLX.O	24.53%	12.09%	6.32
MSFT.O	47.15%	23.97%	10.73

6. Outlook and Trends

The Internet industry may pay more attention to cash flow to cope with major investments and other risk issues; most of the Internet industry's long-term debt ratio is not high, their degree of demand for external financing will remain a slightly floating trend; companies in the profitability of the company needs to spend effort and energy to operate through excellent business solutions and marketing to achieve higher profitability, so that there is the ability to pay interest and continue operating Facing competition and cost pressures, Internet companies should "adapt to local conditions", according to their own situation to develop a practical program, one-dimensional control of operating costs is not a long-term choice, the need for another feasible plan; Internet industry can survive the key point is to be able to keep pace with the times, product upgrades and technological innovation must be the most important thing for all enterprises to focus on. Product upgrades and technological innovation must be the most important part of all enterprises, and the development and grasp of a good operating cycle is also a part of all companies to consider clearly; enterprises need to achieve a balance between the relationship between shareholder returns and company assets, and to use limited assets to continuously produce unlimited profits, re-examine their own business strategies and efficiency; rocketing up, in the current good market situation, to further develop their own advantages, strengthen competitiveness and expand the influence of the industry. to strengthen its competitiveness and expand its influence in the industry.

7. Conclusion

The following points are summarized from the study of liquidity, solvency, profitability and shareholders' returns of Internet companies: First, cash ratios in the Internet industry are generally low, and companies prefer to reinvest funds in their businesses. However, companies will face cash flow pressure if they encounter unexpected situations such as investment, for example, Weibo and Sohu. This is also a side reflection of the need for companies to have sufficient cash flow. Second, the overall debt ratio of Internet companies is as high as 50%, and companies rely heavily on debt financing. However, the long-term debt ratio of the entire Internet industry is not high, and companies do not particularly rely on external financing. And Internet companies are not highly profitable, with generally low EBITDA multiples, which may make interest payments more difficult. Third, Internet companies can achieve profitability to a certain extent, but face competition and cost pressures. However, most Internet companies are controlling their operating costs, i.e., maintaining a balanced relationship between revenues and costs. Fourth, the average turnover rate of the Internet industry is low. At present, the Internet industry needs to continuously upgrade its technology and innovation, and then convert R&D investment into sales revenue, which requires a suitable cycle. Fifth, the ROE difference between the Internet industry is relatively large, the reduction of assets will lead to a reduction in shareholders' equity. But the trend is all about prompting companies to be able to use limited resources to get more resource information. While ROA is lower compared to ROE, the surface industry, the company's ability to use assets to produce profits is comparable. Sixth, the market is highly appraised and positively optimistic about the prospects of the Internet industry.

Finally, it is important to note that for the convenience of the study, the chosen companies are from China as well as the U.S. However, Internet companies do not exist only in these two regions, which can lead to the development of the studied companies being affected by the policies of a particular region. In the future, companies from other regions could be added to the above analysis, which could be used to dilute the impact of policies on the conclusions, in order to facilitate an in-depth study of the issue.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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A Valuation Model for the Development of Sinovac Biological Company under COVID-19 Shock

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Abstract: This paper provides an in-depth study of the impact of the COVID-19 pandemic on the global economy and the pharmaceutical and medicine industry, focusing on the Chinese company Biologicals. The financial situation of Sinovac Biologicals before and after the pandemic is analyzed in depth by building a valuation model with data from two different time periods. Before the COVID-19, the company faced cash flow problems and a relatively low market capitalization. This is mainly because at that time, the company may not have been involved in areas related to vaccine production, and the market capitalization was constrained by market demand and industry competition. However, with the outbreak, the company became actively involved in the development and production of the COVID-19 vaccine, leading to a significant improvement in its free cash flow and a rise in its market capitalization. Although the model results emphasize this positive trend, this paper must keep in mind the model's uncertainty and risk factors. Future economic and market conditions are fraught with uncertainty, and Sinovac Biologicals may also be exposed to other risks, such as volatility in the vaccine market, policy changes and increased competition. Therefore, a combination of these factors is critical to accurately assessing the company's valuation and prospects.

Keywords: COVID-19, Sinovac Biological Company, DCF Valuation Model, Free Cash Flow

1. Introduction

The COVID-19 pandemic has had a profound impact on the global economy [1]. It all started on December 31, 2019, when 27 cases of a new type of pneumonia of unknown origin were detected for the first time in Wuhan, China [2]. The emergence of COVID-19 had a major impact on people's daily lives. On January 15, 2020, the Chinese Center for Disease Control and Prevention (CDC) initiated a Level 1 emergency response [3]. Over the next three years, China implemented extensive and long-term prevention and control measures to address the COVID-19. It was not until January 8, 2023, with the approval of the State Council, that the National Health Commission of the People's Republic of China (NHSC) issued a regulation lifting the preventive and control measures for Category A infectious diseases caused by novel coronavirus infections, effectively removing them from the scope of the State Border Health Quarantine Law of the People's Republic of China [4]. Additionally, on May 5, 2023, the World Health Organization declared in an article that the COVID-19 pandemic is now a recognized, ongoing health problem and no longer constitutes an international

emergency public health concern as it did on January 30, 2020, when the highest level of alert was sounded [5]. The article also notes that while countries have reported nearly 7 million COVID-19-related deaths to WHO, the actual number of deaths is likely to be much higher, at least 20 million. The outbreak has had a huge economic impact on a wide range of industries in China and globally [6]. The healthcare sector has been directly affected, but other sectors such as logistics, trade, aviation and tourism have also been significantly impacted. However, despite the economic challenges posed by COVID-19, it also presents opportunities for these industries [7]. The economic impact of COVID-19 on pharmaceutical companies is therefore complex and varied, depending on their specific areas of operation.

The impact of COVID-19 touches all aspects of the pharmaceutical industry, including production, supply chain, sales, research and development, and investment [8]. In order to provide readers with a clearer understanding of the challenges and opportunities posed by pandemics, this paper focuses on pharmaceutical companies involved in the production of COVID-19 vaccines. After several rounds of data screening and extensive analysis, the authors chose Sinovac Biotechnology Company as the only data analyzed. Taking the time when the pandemic started as a reference, a valuation model was established to study the company's economic data before and after the COVID-19 pandemic.

Sinovac Biotech was selected as a case study because the company experienced a particular set of challenges and opportunities during the COVID-19 pandemic. At the beginning of the COVID-19, Sinovac Biologicals was hit as hard as any other company due to the global health crisis caused by the COVID-19. However, what made Sinovac Biotech stand out was that it not only found business opportunities in the crisis, but also unprecedented challenges through the production of the COVID-19 vaccine.

Sinovac Biotech plays a key role as an important manufacturer of the COVID-19 vaccine. They had to meet not only the domestic market demand but also the global market demand, which posed a huge challenge to their production capacity. Production of the vaccine has scaled up dramatically to meet global demand during a pandemic, which may require additional investment in equipment and human resources.

Against this backdrop, this paper will analyze the performance of Sinovac Biologicals in detail, examining how they responded to the surge in production demand during the pandemic and how they balanced the challenges and opportunities. This case will not only provide insight into the pharmaceutical industry's situation during the COVID-19 pandemic, but also provide useful insights into how pharmaceutical companies can take effective measures in response to a global health crisis.

2. Data

2.1. Data Selection

Given that this research focuses on valuation modeling of the impact of COVID-19 on the development of the pharmaceutical industry, the author carefully chose the vaccine sector, which is closely related to the current global COVID-19, as the focus of the research, and specifically selected Sinovac Biotech as the only data analyzed from a number of pharmaceutical companies that provide COVID-19 vaccines globally. There are multiple well-thought-out reasons behind this choice.

First, Sinovac Biotech, as a publicly traded company, provided the high-quality financial data author needed to provide a solid data base for the analysis. These data will allow the author to conduct an accurate and comprehensive financial assessment to better understand the company's operating conditions and financial performance.

Secondly, considering that Sinovac Bio is headquartered in China, this makes its financial position significantly affected by the national economy of China. As one of the world's largest countries in terms of population, China has a significant influence on the global pharmaceutical market. Therefore,

choosing Sinovac Biologicals as the subject of the project study helps to gain insights into the dynamics of China's domestic pharmaceutical market and to explore the performance of international pharmaceutical companies in the Chinese market.

Finally, considering the fact that the COVID-19 was first detected in China and received rapid attention from the Chinese government, the financial data of Sinovac Biologicals, a company involved in the development and production of the COVID-19 vaccine, may be significantly characterized in this context. Therefore, by analyzing Sinovac Bio's financials in depth, this paper can expect to gain deeper insights to understand the company's performance and future growth potential during the COVID-19 outbreak.

Overall, the selection of Sinovac Biotech as a research subject is based on a number of considerations and aims to provide a rich and in-depth data base for the pharmaceutical industry development modeling study, in order to better understand the company's business and its positioning in the global pharmaceutical market.

2.2. Data Sources

In this paper, this paper has successfully obtained the annual reports of Sinovac Biotech, Inc. for the period of 2015 to 2022 by accessing the website of the United States Securities and Exchange Commission (U.S. Securities and Exchange Commission) [9]. This rich source of data was carefully organized and categorized to provide a solid foundation for the research.

This research plan to use a discounted cash flow valuation model to project the future valuation of Cochrane Biotech. This model will take into account various key factors, such as the company's financial indicators, industry trends, market outlook, and macroeconomic conditions. By analyzing these data and factors in depth, the research will be able to assess the future value of Sinovac Biologicals more comprehensively and professionally.

2.3. Establishment of Data Valuation Model

In order to gain a more professional and clearer understanding of the impact of the COVID-19 on Sinovac Biologicals, the research will use two different data valuation models for a more comprehensive analysis. These two models will help us to explore the situation before and after the outbreak in depth and make a comparative analysis. Specifically, the author will construct the following two underlying valuation models:

First, this study will build a pre-epidemic model covering the time period from 2015 to 2019 using a discounted cash flow valuation model. This will allow the author to assess the future valuation of Sinovac Biologicals in the absence of the impact of the COVID-19 epidemic.

Second, this study will construct a model for after the start of the outbreak, covering the time period from 2018 to 2022, again using a discounted cash flow organization model. This model will help assess the economic impact of the COVID-19 epidemic on Sinovac Biologicals, as well as the future valuation of the existing company.

Through the creation of these two models, the research will be able to calculate the valuation of Sinovac Biologicals for the next five years, when there is no impact of the outbreak and under the impact of the outbreak, respectively. This will help allow the research to determine if the impact of the COVID-19 epidemic on the company will be positive or negative.

3. Methodology

3.1. Calculation

This paper adopts DCF valuation model, which is calculated by the following detailed formula:

$$DCF = \frac{FCFF_1}{(1+r)} + \frac{FCFF_2}{(1+r)^2} + \frac{FCFF_3}{(1+r)^3} + \frac{FCFF_4}{(1+r)^4} + \frac{FCFF_5}{(1+r)^5} + \frac{FCFF_5}{(1+r)^5} \times \frac{(1+g)}{(r-g)} \quad (1)$$

In this model, r represents the discount rate, g represents the perpetual growth rate, and FCFF represents the free cash flow. These three parameters play a crucial role in DCF valuation, the discount rate is used to consider the time value of future cash flows, and the perpetual growth rate is used to estimate the long-term growth potential of the firm. And as the core of the DCF model free cash flow is used for financial forecasting of the enterprise, the formula for free cash flow (FCFF) is as follows:

$$\text{Free Cash Flow (FCFF)} = \text{Net Income} + \text{Interest} * (1 - \text{Tax Rate}) + \text{Depreciation and Amortization} - \text{Capital Expenditures} - \text{Working Capital} \quad (2)$$

Through this refined valuation methodology, this paper is able to more accurately assess the value of a business, based on financial projections and capital market conditions, providing strong data support for decision makers. This specialized approach helps to reduce investment risks and increase the credibility of financial decisions, enabling companies to better plan their future strategic development.

3.2. Process

First of all, this paper will carefully organize the company's financial statements and present the data clearly in two Excel sheets, covering the years 2015 to 2019 and 2018 to 2022 respectively. In this process, this paper will extract data related to net income, interest, tax rate, depreciation and amortization, capital expenditures, and working capital from the annual reports of Cochrane Biologicals, Inc. in order to create a complete bottom line table. Next, this paper will apply the financial modeling formulas this paper learned earlier to calculate the free cash flow (FCFF) of Sinovac Bio for the period from 2015 to 2022. This calculation will provide us with key data to understand the company's financial position.

This paper will then begin to construct a valuation model. By deeply analyzing the previously obtained data, this paper will estimate the company's revenue growth rate, tax rate, depreciation and amortization rate, capital expenditure rate, and working capital rate for the next five years. This paper will then apply these estimates, in conjunction with the valuation model, to calculate the actual value of the company over the next five years. Finally, this paper will calculate the future free cash flow for two separate scenarios, one forecast covering the years 2020 to 2024 in the absence of the outbreak, and the other forecast covering the years 2023 to 2027 after taking into account the impact of the outbreak. This will provide with a valuation of two different scenarios of the company's future development, which will help to more fully assess the potential risks and opportunities posed by the outbreak to Sinovac Biologicals.

4. Analysis of Results

For forecasting future data, growth rate-based assessment is a common approach [10]. In this approach, this paper use historical data and some key assumptions to make predictions in order to inform future decisions.

First, this paper will focus on the revenue growth rate (Revenue Growth). This paper begin by analyzing revenue data from previous years to identify trends in revenue growth. Then, this paper will make a bold estimate that directly predicts the revenue growth rate for the next five years. This estimate relies on multiple factors, including market trends, industry competition, company strategy,

and more. By applying this growth rate, this paper are able to calculate projected revenue for the next five years.

Next, this paper proceeded to estimate Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA). For this purpose, this paper first added up the EBITDA margin data for the past five years and calculated its average. Then, by applying this average to the projected revenue for the next five years, this paper were able to derive EBITDA for the next five years. In addition, since EBITDA margin equals the ratio of EBITDA to revenue, this paper were able to derive an estimated EBITDA value. Similarly, this paper use the same methodology to calculate Depreciation & Amortization Rate (D&A Rate) and Tax Rate (Tax Rate) and arrive at a specific valuation for the next five years. In addition, Capital Expenditure and Rate of Non-Cash Working Capital are also included, and these factors are affected by a similar estimation methodology. Subsequently, this paper can utilize the data from these estimates to calculate free cash flow for the next five years using the Free Cash Flow to Firm Value (FCFF) formula. Finally, by applying a discounted cash flow (DCF) valuation model and selecting an appropriate discount rate and perpetual growth rate, this paper can provide insight into the future valuation of the business. This approach provides a systematic way to assess the future performance of a business, and although the accuracy of the estimates relies on reasonable assumptions and data availability, it provides decision makers with valuable information to support strategic planning and investment decisions.

Below are two separate tables of projections, Table 1 shows the FCFF valuation table without the outbreak and Table 2 shows the FCFF valuation table now, after the outbreak. Based on the data in Table 1, this paper can observe that the free cash flow valuation is negative from 2020 to 2024. This reflects that the company's operations are not generating sufficient cash flow to meet its capital expenditure and other financial needs. This situation requires the Company to take a number of steps to improve its free cash flow, including but not limited to increasing revenue, reducing costs, and optimizing capital expenditures. Continued negative free cash flow is a worrying sign, as it could lead to the company facing a serious problem of underfunding in the long run. In particular, after considering a perpetual growth rate of 1.5% and a discount rate of 9%, the company's pre-epidemic market capitalization was estimated to be -504,955.23 based on the DCF valuation formula. This valuation is much lower than the current market price, which raises concerns about the company's valuation and long-term health. The results of this analysis suggest that the company's financial position requires urgent attention and improvement. The company may need to take a number of steps to improve its cash flow, including increasing revenue streams, reducing expenses through effective cost control, and optimizing capital expenditures to ensure its sustainable growth in the future. In addition, the company should review its long-term strategy to ensure that it can maintain good financial health in the future and avoid the risk of funding shortfalls and market capitalization declines. This analysis not only provides insight into the current state of the company, but also provides a useful reference for future strategic planning.

Table 2 presents a series of helpful trends that provide important insights into the financial health of the company. Despite low free cash flow at the time of the outbreak in early 2020, the company has experienced significant growth in free cash flow since 2021. Particularly noteworthy is the significant upward trend in the company's free cash flow from 2023 through 2027, which suggests that the company's financial health improved significantly during this timeframe. This positive trend can be attributed to an increase in pre-tax profits as well as effective management of capital expenditures and net working capital. The company now has the opportunity to fully utilize these positive free cash flows to support business growth, pay down debt, or give back to shareholders. However, these cash flows need to be carefully managed to ensure that funding requirements for various needs and investments are met in the future.

Table 1: 2015-2024 pre-epidemic FCFF valuation.

thousands of U.S. dollars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue	174,346	72,431	174,346	229,650	246,053	196,842	458,643	687,964	914,992	988,192
Revenue Growth		-58.46%	140.71%	31.72%	7.14%	-20.00%	133.00%	50.00%	33.00%	8.00%
Income Tax	-2,985	-2,664	-8,339	-10,472	-5,605	2,141	4,987	7,480	9,949	10,744
Tax Rate	63.42%	60.79%	-29.80%	-39.39%	-9.20%	9.16%	9.16%	9.16%	9.16%	9.16%
EBIT	-4,707	-4,382	27,980	26,585	60,956	23,361	54,441	81,661	108,609	117,298
Depreciation & Amortization	6,519	5,310	4,881	5,136	4,817	5,852	13,622	20,433	27,175	29,349
Rate of DA	3.74%	7.33%	2.80%	2.24%	1.96%	2.97%	2.97%	2.97%	2.97%	2.97%
EBITDA	1,812	928	32,861	31,721	65,773	29,212	68,063	102,094	135,785	146,648
EBITDA Margin	1.04%	1.28%	18.85%	13.81%	26.73%	14.84%	14.84%	14.84%	14.84%	14.84%
Capital Expenditure	5,300	12,700	11,900	5,600	10,600	10,118	23,574	35,361	47,031	50,793
Capex Margin	3.04%	17.53%	6.83%	2.44%	4.31%	5.14%	5.14%	5.14%	5.14%	5.14%
Change in NWC	4,446	6,040	-46,862	-114,625	-36,438	-31,775	-74,025	-111,037	-147,680	-159,494
Rate of NWC	2.55%	8.34%	-26.88%	-49.91%	-14.81%	-16.14%	-16.14%	-16.14%	-16.14%	-16.14%
FCFF	10,462	2,242	-12,681	-72,896	29,157	-8,969	-20,902	-31,353	-41,699	-45,035

Table 2: 2018-2027 post-epidemic FCFF valuation.

Thousands of U.S. dollars	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Revenue	229,650	246,053	510,624	19,374,904	1,492,761	1,597,254	2,076,430	3,737,575	9,343,937	10,278,331
Revenue Growth		7.14%	107.53%	3694.36%	-92.30%	7.00%	30.00%	80.00%	150.00%	10.00%
Income Tax	-10,472	-5,605	-31,438	-3,104,130	62,893	-46,687	-60,717	-109,290	-273,226	-300,549
Tax Rate	-39.39%	-9.20%	-20.39%	-27.10%	41.94%	-10.83%	-10.83%	-10.83%	-10.83%	-10.83%
EBIT	26,585	60,956	154,218	11,454,513	149,951	431,259	560,636	1,009,145	2,522,863	2,775,149
Depreciation & Amortization	5,136	4,817	155,172	11,653,977	147,804	335,423	436,050	784,891	1,962,227	2,158,450
Rate of DA	2.24%	1.96%	30.39%	60.15%	9.90%	21.00%	21.00%	21.00%	21.00%	21.00%
EBITDA	31,721	65,773	309,390	23,108,490	297,755	766,682	996,687	1,794,036	4,485,090	4,933,599
EBITDA Margin	13.81%	26.73%	60.59%	119.27%	19.95%	48.00%	48.00%	48.00%	48.00%	48.00%
Capital Expenditure	5,600	10,600	127,700	751,000	439,100	97,498.76	126,662	227,992	569,980	626,978
Capex Margin	2.44%	4.31%	25.01%	3.88%	29.42%	6.10%	6.10%	6.10%	6.10%	6.10%
Change in NWC	-114,625	-36,438	-618,275	-11,621,580	1,467,502	-471,123	-612,547	-1,102,585	-2,756,462	-3,032,108
Rate of NWC	-49.91%	-14.81%	-121.08%	-59.98%	98.31%	-29.50%	-29.50%	-29.50%	-29.50%	-29.50%
FCFF	-72,896	29,157	-249,975	25,494,017	1,411,069	244,747	318,194	572,750	1,431,874	1,575,062

Considering further, when keeping the variables in equilibrium, using a perpetual growth rate of 1.5% and a discount rate of 9%, the company's future market capitalization post COVID-19 epidemic is expected to be 16,826,513.18 based on the DCF valuation formula. This valuation is much higher than the current market price, which underscores the company's latent potential to increase in value. It also emphasizes the positive impact of the financial improvement experienced by the company post the outbreak on its future market capitalization. This valuation gap provides investors with a favorable investment opportunity as well as a capital base for the company to further develop and grow. However, it should be noted that this valuation is dependent on a number of factors, including assumed sustainability and market factors, and therefore requires careful risk assessment and monitoring to ensure the sustainability of investment decisions.

5. Conclusion

The impact of the outbreak on Cochrane Biologicals is undoubtedly complex and multi-faceted. Based on my model predictions, the COVID-19 has given Sinovac Biologicals a huge opportunity that cannot be ignored. This opportunity is not only reflected in the company's profitability, but also in its prospects for future growth. However, this paper need to analyze all this wisely and not just see the benefits. First, let's talk about the DCF model. the DCF model is a methodology used to value a company that relies on several factors, including expected future cash flows, the discount rate, and the assumptions used in the model. During the outbreak, Sinovac Biologicals may have received additional cash flow from the production of vaccines, which may have positively impacted the valuation of the DCF model. However, this is not a long-term phenomenon and therefore future cash flows need to be considered with caution. In addition, DCF models are very sensitive to future assumptions. There is a lot of uncertainty in the process. It must understand that the future is always fraught with risk. Investors need to take into account risk factors such as market changes, industry competition and macroeconomic factors and factor these into the valuation. These risk factors may adversely affect a company's future cash flows, which in turn affects the valuation of the DCF model. It is worth pointing out that this paper uses a base valuation model that may not take all factors into account. There may be unforeseen events in the future which may have a significant impact on the company's business and data. This is inevitable as it cannot predict everything in the future.

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Research on Digital Transformation of International Trade

– A Case Study on Amazon

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Abstract: At present, digital economy is a new economic form that uses new technologies with new ideas to create new value. International trade is a crucial way of global economic flow, and its digital transformation is the product of the combination of the exploring trend of digital economy and international transaction rules, and is an important basis for countries to improve their core technologies in the era of trade globalization. Taking Amazon as an example, this paper focuses on the impact of Amazon's transformation on its market share. Based on the data change of Amazon stock market price from 1997 to 2023, this paper mainly analyzes the difficulties and countermeasures encountered by Amazon in the process of transformation. It is found that Amazon mainly relies on the development of its own technology and the clear and rigorous analysis of market environment and supply and demand data, and chooses the most suitable path on the road of transformation. This is of significant value to other similar enterprises and has a guiding role in promoting the global digitalization process.

Keywords: international trade, digital transformation, Amazon

1. Introduction

The economy of the digital age is becoming more virtual, and the current international trade situation has entered a new stage. To promote domestic technology research and develop business cooperation around the world, countries take advantage of the convenience of digitization to form new business models, and gradually change the traditional international trade situation. In the case of China-US trade, the US imposed export restrictions on Chinese digital services at the beginning of the trade war. Although China is the world's second largest economy after the United States, it is still subject to a certain degree of barriers in the development of core technology and digital economy.

Since the reform and opening up, China's economy has developed rapidly, and its GDP has continuously increased. However, due to the popularity of digital services in recent years, the trend of international economic trade under the new situation is informatization, internationalization and standardization [1]. Spurred by the trade war, China has quickly put the digital transformation of international trade on the agenda. For a long time, the academic community has been constantly studying and demonstrating the issue of digital transformation. Some scholars have summarized the methods of measuring digital economy [2], including replacing the added value of digital economy

with the added value of Information and Communications Technology industry. Some scholars mainly analyzed the differences between the export models of China and the United States in the service trade industry that is highly dependent on digital technology, and fully grasped the changing trend and the law behind it [3, 4]. By organizing the average value of external trade of various provinces in China, some scholars proposed that high-quality integration countermeasures such as cross-border e-payment system and dispute settlement system should be improved [5]. Others have proposed the value of government digitization in transforming international trade [6].

Based on the background of digital economy, this paper studies the digital transformation of international trade. Taking Amazon as an example, this paper summarizes the reasons and ideas for its success by analyzing the transformation path of this typical enterprise, and proposes a digital transformation scheme that can be applied to most enterprises, so as to help readers understand the advantages and disadvantages and internal logic of enterprise digital transformation.

2. The Digitization Process of International Trade

The disunity of language, culture, currency, and even inflation rate will cause poor information of enterprises, and eventually lead to weak competitiveness of enterprises. Most of China's original international trade export enterprises still occupy the international market with price advantages, and enterprises and workers lack the awareness of improving production technology and improving production efficiency. In addition, the development of digital technology in China is relatively slow, the export trade products are mostly traditional industrial products, the export rate of products produced by high-tech is low, and it is still in the primary stage of development.

Now entering the era of digital economy, because of its high penetration, rapid and other characteristics [7], countries all over the world are scrambling to formulate digital economy development strategies, hoping to reach the high ground of digital economy faster. Despite China's late start and unbalanced inter-regional economic development, the construction of communication infrastructure has developed rapidly, and the penetration rate of mobile network have ranked among the top in the world [8]. China is seizing development opportunities to create new possibilities for backward regions, drawing on the experience of developed countries and regions in technology, system and other aspects, and promoting the improvement of economic operation efficiency.

Over the past two decades, international trade and corporate investment expansion have jointly promoted the interdependent global economy, and the achievements of trade liberalization have brought huge returns to countries around the world. However, according to the World Bank, the expected slowdown in the global trade economy, along with possible problems such as stagflation, will create additional obstacles for consumers and businesses. Therefore, the difference in the level of digital information technology has also become a major problem in the current digital transformation. When the country promotes the transformation of enterprises, it should also take into account that the difference in the level will lead to the widening gap, and the less developed areas fall into the "backward economic development - slow digital economy - slow economic growth" vicious circle.

3. Case Study on Amazon

This paper chooses Amazon as a case study, mainly because Amazon relies on its innovative business model and digital transformation to successfully transform from the initial retailer into the world's largest Internet enterprise by market value, and to raise the development of international trade and digital economy.

3.1. Background Description

In 1994, at the age of 30, Jeff Bezos quit his job to start an Internet-based bookstore. Within two months of selling its first book, it was available in all 50 states, but it still cannot compete with Barnes and Noble or Borders. It is still considered a minor player in the publishing industry. In July 1996, Amazon launched the Affiliate Program, an integral part of Amazon E-commerce. Bezos has always cared about long-term investments. In 2012, DeepField Networks reported that a third of Internet users use Amazon's servers on a daily basis. During this period, Amazon launched a lot of services, like Prime. They all be praised in the future. Amazon is actually an online store. The e-commerce business contributes more than 50% of the company's total revenue. In fact, a significant portion of the company's revenue comes from third-party businesses that sell products on its platform. Amazon has seen impressive growth over the past few years, much of it driven by its core business of commerce. As of June 2022, Amazon held 37.8 percent of the U.S. e-commerce market, making it the leading online retailer in the United States [9]. Figure 1 below shows the trend of the stock price of Amazon, which also describes the trend of digital transformation in the current era.

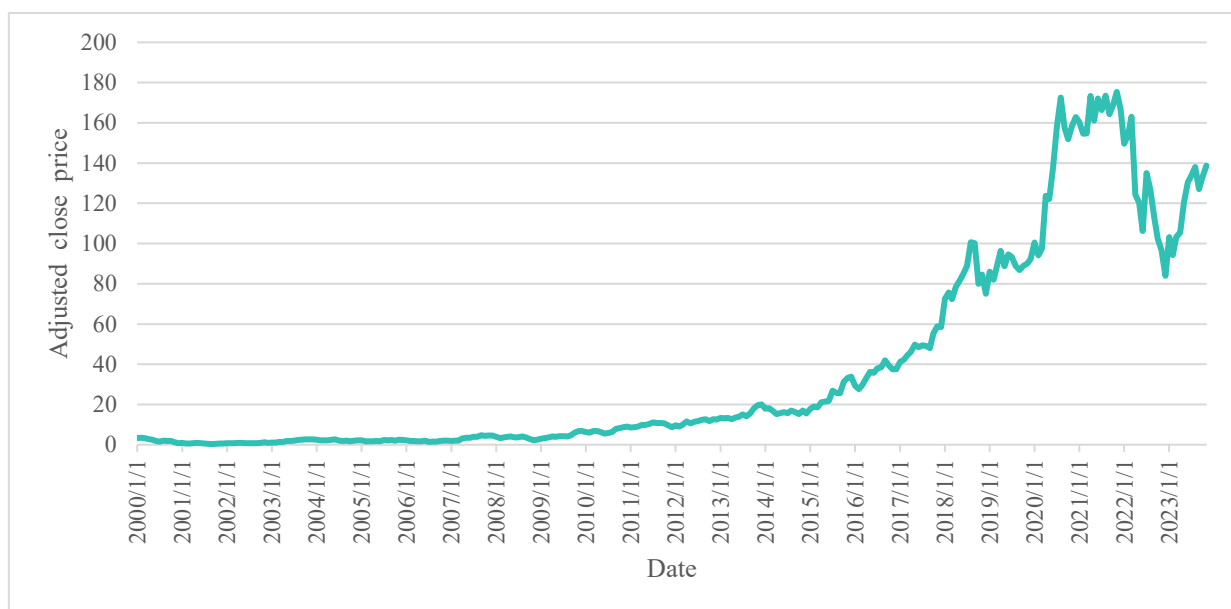


Figure 1: The stock price of Amazon between 2000-2023(Source: Yahoo Finance)

3.2. Challenge from Complex Environment

Sellers are facing challenges of shipping options, FBA (Fulfillment by Amazon) logistics and Map issues. There are lots of problems not yet been mentioned, but it means Amazon's success needs keeping up with changing environment and experts, both internally and through agencies like ad Lucent. This is how they run a healthy and profitable program. It means sellers need to learn lots of things to adapt Amazon's new policy or new decision. Amazon need to protect its marketplace from others, retain its sellers.

To solve this question, first, the performance potential on Amazon can be compared to other channels, the resources can be reallocated accordingly. Take advantage of what Amazon has to offer, including Amazon's Boost with FBA campaign, and Amazon Web Services (AWS). AWS is a product that will offer the backbone for businesses to run their Internet businesses from the cloud. Companies can get the information they want about Amazon from this. Different to other Website, Amazon has improved search and suggestions based on prior purchase. In addition, when combined with Prime membership, Amazon has a 360-degree view of its consumers and sellers, including data

on online transactions let sellers know what's the main products consumers like and entertainment preferences can also do that too. One of Amazon's big strengths is that it is a 27-year-old digital company that avoids the outdated technology that hinders today's sellers. The company led the move to the cloud with AWS, eliminating the need to invest in mainframes, inflexible and expensive relationship technologies, and massive data centers [10].

3.3. Challenge of Profitability

Amazon's profitability is not guaranteed. Depending on the customer's sales structure, profit, shipping costs, and competition for similar products, profits on Amazon can vary greatly, and many sellers do not know if they are really profitable. At a major retail conference, there was a big question called "Is it worth selling on Amazon?" Tumi, a maker of luxury handbags, has been selling its products to Amazon at regular prices for years. The head of Tumi said Amazon misunderstood consumer demand and left only a small inventory of handbags, but there was always more demand for hand bags. Amazon is often seen as the king of online marketplaces, however, there are still many other marketplaces that can compete with Amazon in terms of features and overall user experience.

In order to solve this problem, agents can use reporting tools to capture statistics, so that buyers find is a better way. Tumi uses this as a way to increase profits. Tumi prefers to sell to other companies that can see Tumi's products on Amazon. This decision allows Tumi to have better control over inventory and better sales data. Most of the time sellers do not need to care about this problem, because Amazon do have a large range of tools to help sellers manage their business on the platform. Though other marketplaces also have this same type of tools, it is hard to use and not on the same level. Amazon's big difference with other marketplaces is it has 12 million products for purchase. Compare to other marketplace, such like eBay has less selection. There are both advantages and disadvantages for sellers. Less selection means less compete, which also means less exposure rate. Most of time sellers will choose Amazon, because they can gain more profit on it [11].

4. Discussion and Suggestions

4.1. Discussion

At the Amazon Cloud Technology China Summit held in June 2023, Amazon Cloud Technology emphasized that it would build a value achievement system mainly through building enterprise core capabilities, deeply mining industry needs and striving to cover the whole field, and use technology, sales and talent as the pillars to support the system, in order to achieve greater value of the enterprise.

4.1.1.Improvement of Technology

Amazon uses the word "deep" to summarize its advantages at the level of building core competencies. With the recent spurt of generative artificial intelligence (AI) technology, Amazon rapidly deployable infrastructure covering the world through internally developed chips and rich and sophisticated computing, while improving the ability to stabilize the system, creating a solid foundation for the enterprise's underlying architecture.

AI and machine learning have also been a focus for Amazon over the past two decades. Whether in the production of technical products or the application of the commercial field, Amazon relies on the strong computing power of cloud technology to support and continuously deepen and excavate industry capabilities in various subdivisions, deeply integrate with the real economy, and promote the reshaping of industry digital construction. Taking Veeva System, which came out on June 6 2023, as an example, it is based on the commercial operation platform launched by Amazon in the field of life sciences, and uses a wide range of services about scientific machine learning and database analysing

to help pharmaceutical companies realize the digital management of the whole process of drug marketing, which greatly improves the efficiency of platform operation. It also ensures the safety and compliance of the business.

4.1.2. External Environment

At the summit, Amazon's global vice president mentioned that “to face hard-won opportunities and new demands that cutting-edge technology bringing in this time of both accidents and challenges, we must be forward-looking, target global users and improve the resilience of business products.” In the process of transformation and development, Amazon not only continuously pays attention to customer demand and business load which are greatly affected by the speed of scientific and technological progress, so that the staff is able to adjust the thinking of technological change in time, but also creates differentiation advantages of enterprises according to the changes in the economic situation of international trade.

4.2. Recommendations

4.2.1. For Other Enterprises in the Same Industry

Amazon is able to improve their existing products by sharing experience, advanced technology, and a broad user base because of its dynamic capabilities [12]. If companies in the same industry as Amazon can also pay more attention to independently developed chips and high-tech, and analyze customer groups through formal technical means to create their own unique advantages. It would make the transformation of enterprises smoother and more in line with the development trend of digitalization. For example, Internet companies can distinguish the system of settling in and paying commission for individual sellers and enterprise sellers on the platform, and provide more accurate push and service for customers with different interests and preferences. In short, the ability of companies to embrace new technologies is the key to future success.

4.2.2. Government Support

First of all, the government should strongly support enterprises that are willing to carry out digital transformation, such as issuing some relevant policies or regulations to provide different levels of financial subsidies according to different levels of company development stage, so that enterprises have greater motivation to carry out technological innovation. Secondly, the government should actively use and promote cross-border payment systems, encourage enterprises to use local currencies as international trade settlement currencies, further develop the international trade order of currency diversification, and accumulate transaction credit in the international market at the same time. In addition, with the help of funds and systems, the government should also pay attention to the infrastructure construction of the digital economy such as blockchain and big data, attract high-end enterprises to enter the digital economy park, promote the integration of digital centers, promote the application of technologies such as the Internet of things in international trade, and consolidate the digital industry.

5. Conclusion

Now in the era of digital economy, the trend of enterprises transforming from the traditional model to the digital model through the development of science and technology has been further strengthened. The use of science and technology to find the right digital transformation can not only bring more economic benefits to enterprises, but also promote the international trade transformation through the transaction between enterprises. Through the analysis of Amazon, a typical enterprise case, this paper

hopes to provide more help to more enterprises in the transformation of international trade under the background of digitalization. The article mainly emphasizes the challenges encountered by Amazon in the implementation of enterprise transformation and the countermeasures, and summarizes some transformation suggestions based on experience. For example, the primary task of the enterprise is to strengthen the development of digital technology and clarify the market demand, while the government should pay attention to the establishment of the business system and the improvement of incentive policies for enterprise development.

However, since this paper only analyzes Amazon, the digital transformation countermeasures and suggestions obtained may not be applicable to the development of all enterprises and cities. In the following research, data of more enterprises will be collected to supplement the conclusions of this paper.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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