

Taking JD Baitiao as an Example for the Securitization of Internet Financial Consumer Loans: Research on the Structure and Potential Risk

Lang Xia^{1,a,*}, Yuze Liu², Jiayi Wang³, Shuhan Liu⁴

¹*New York University, New York, New York, 10012, United States*

²*Dongbei University of Finance and Economics, Dalian, Liaoning, 116025, China*

³*Windermere Preparatory School, Windermere, Florida, 34786, United States*

⁴*Chongqing Bashu Ivy academy school, Chongqing, 401147, China*

a. langmichellexia@gmail.com

**corresponding author*

Abstract: With the rapid development of internet finance, the consumer lending market has become an important field in the financial industry. As one of the largest consumer financial platforms in China, the securitization structure and potential risks of JD Baitiao have attracted much attention. This article explores the structure and potential risks of securitization of consumer lending in internet finance, using Jingdong White Sheet as an example. Firstly, this article provides a detailed analysis of the securitization structure of JD Baitiao, including the basic concept of asset securitization, the process of asset securitization of Jingdong White Sheet, and its characteristics. Secondly, this article analyzes the potential risks of securitization of JD Baitiao, including credit risk, market risk, legal risk, and operational risk, etc. Finally, this article proposes preventive measures and suggestions for these risks.

Keywords: Internet finance, consumer lending, securitization, JD Baitiao, Risk prevention

1. Introduction

Internet finance, as a new financial business model, has deeply penetrated into people's daily lives, and China was a pioneer in this area [1]. Online financial consumption loans have gradually become an indispensable part of people's daily lives. In order to meet market demand, more and more financial institutions and businesses have started to securitize traditional credit businesses in order to improve asset liquidity and investment value [2]. Among them, securitization of online financial consumption loans is an innovative financial product that has received widespread attention, because it allows for lowering the cost of financing, optimizing the company's financial structure, and improving cash flow liquidity [3].

1.1. Research Significance

By studying Internet consumer finance asset securitization, we can gain a deeper understanding of its structure, development status, problems, and prospects for the development of the consumer finance market through the case study of Jingdong Baitiao. The research on Internet consumer finance asset securitization has important theoretical and practical significance [4]. As an innovative financial

product, it can provide new ideas and methods for the development of consumer finance and promote the healthy development of consumer credit [5].

1.2. Research Method

This paper mainly adopts the case study method and the literature analysis method.

The case study method is mainly based on the premise of theory, with the asset securitization of JD Baitiao as an example. Using the company's relevant data for comprehensive collection and collation, reading domestic and foreign related literature and cases after the perspective of securitization of Internet Financial Consumer Loans, and taking the innovations and risks arising from the process of securitization JD Baitiao as an analytical Object.

The literature analysis method is mainly through reviewing domestic and international literature on the securitization of e-commerce platforms under the Internet to collect and organize the relevant theories and information and to explain the theories, definitions, and operation methods of asset securitization.

2. Overview of JD Baitiao

2.1. JD Groups

JD Group's companies include JDCT, JD Mall(JD online shopping platform), Paipai.com, JD instant Messaginng Intellligence(JIMI), O2O and overseas business unit.JD is positioned as a "techonology and service enterprise based on supply chain". Its business involves three major sectors: e-commerce, finance and logistics, and its business involves retail, technology, health, insurance, production and development, industry, privated brands , international and other fields.

2.2. Beijing Jingdong Century Trading Co., Ltd (JDCT)

JD is China's largest self-operated e-commerce company, with a business model similar to that of the Amazon shopping platform. It listed separately in the United States and Hong Kong. Beijing Jingdong Century Trading Co., Ltd, the company operating JD Baitiao, is the subsidiary corporation of the JD which listed in Hong Kong.

2.3. JD Baitiao

According to the official website of JD, as of March 6, 2023, the annual active users of JD reached 580.5 million, and the number of JD Baitiao users has reached 62 million.

JD Baitiao is a formal Internet credit payment product launched by JDCT in 2014, which is a product of consuming first and paying later. After opening an account of JD Baitiao, consumers can make payments and repay on schedule which can be chosen by themselves. First, JD uses big data technology to assess the user's risk, including the consumers' consumption in JD online shopping platform, after-sales evaluation, delivery information and refund information. Second, JD granting them a credit limit based to consumers' JD Baitiao account, maximazing to 15,000 yuan. Consumers repay the loan according to the rules, ans their good borrowing records will be reflected in the credit system created by The People's Bank of China, and vice versa.

3. Case study

3.1. Transaction Structure

The originator (JDCT) assigns the consumer loans generated by using JD Baitiao (underlying assets) to a Special Purpose Vehicle (SPV). After JDCT transfers the underlying assets, the SPV packages them to JD Baitiao ABS and sells them to investors. The money paid by the investors for the JD Baitiao ABS will be delivered to the SPV and transferred to the originator (JDCT). In the future, JD Baitiao consumer loans and corresponding interest will be sent to SPV by the originator and finally to the investors. The time range of this securitization is 2 years.

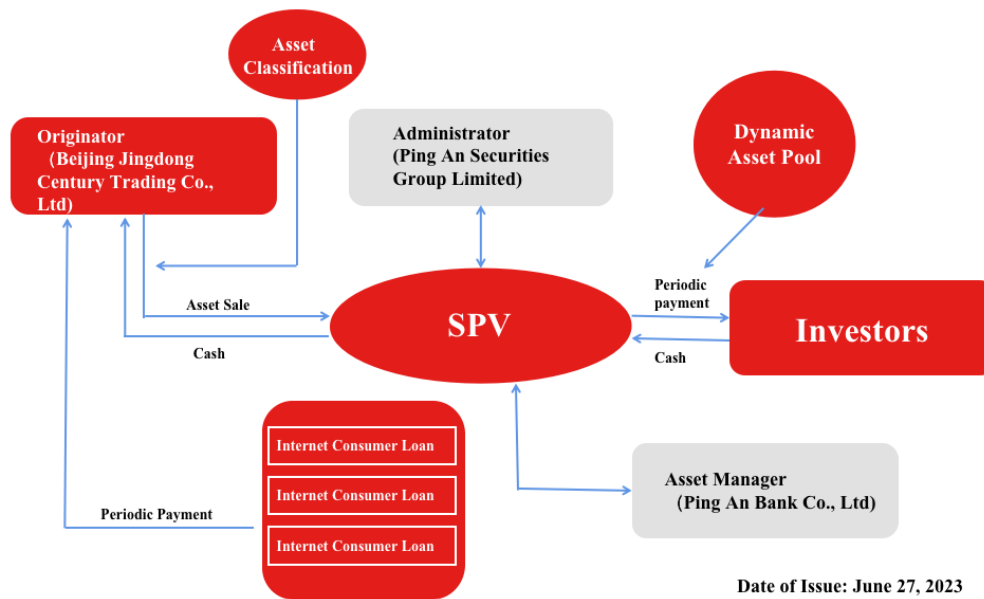


Figure 1: Basic transaction structure of JD Baitiao securitization

Source: Beijing Jingdong Century Trade Co., LTD The second phase of Jingdong Baitiao, No. 3 East Road, 2021 Asset-backed commercial paper offering prospectus

3.2. Underlying Asset

The underlying assets in the asset pool for the securitization of JD Baitiao are accounts receivable assets generated by consumers using the credit purchase service of JD Baitiao to purchase goods or services at JD online shopping platform.

3.2.1. Formation of Underlying Asset

(1) Repayment System

There are two payment systems: billing system and order system. Both of them have two options offered to JD Baitiao consumers: one-time repayment and instalments (3 months, 4months, 6 months, 8 months, 12 months, and 24 months). The only difference between the two-repayment system is the setting of repayment date. In billing system, the repayment date is the 9 days after billing date. Billing

date is the date that consumers activated JD baitiao account. In order system, the repayment date is the date that the consumer borrow moeny from JD baitiao to shop on the JD shopping platform.

Table 1: Repayment system policy

	Billing System	Order System
One-time	Repayment date: 9 days after billing date	Repayment date: date of using JD Baitiao
Installment	Repayment date: 9 days after billing date	Repayment date: date of using JD Baitiao
	Installment times: up to 24 times	Installment times: up to 24 times

Source: JD website helping center, <https://help.jd.com/user/issue/201-622.html>

(2) Repayment Interest

For the repayment interest rate, no matter which installment repayment plan JD Baitiao consumers choose, the interest rate per month is always 0.5% to 1.2% of the prncipal. Each JD baitiao consumer get their monthly interest rate based on their credit which is evaluated by JDCT. The formula of calculating for one month is $\text{principal} \times \text{interest rate} + \text{principle} / \text{number of pinstallment}$.

The graph's example part is based on the precondition: if the principal is 3000 RMB, and the interest rate is 0.5%.

Table 2: Repayment interest policy

Installment (month)	Interest rate per month (%)	Example (RMB)	Final interest rate (%)
3	0.5 - 1.2	$3000 \times 0.005 + (3000/3) = 1050$	1.5
6	0.5 - 1.2	$3000 \times 0.005 + (3000/6) = 515$	3
12	0.5 - 1.2	$3000 \times 0.005 + (3000/12) = 265$	6
24	0.5 - 1.2	$3000 \times 0.005 + (3000/24) = 140$	12

Source: JD website helping center, <https://help.jd.com/user/issue/201-622.html>

According to the JD Baitiao platform, the annual percentage rate (APR) will fluctuated based on the number of installment. Based on Figure X, it is obvious that the interest rate (APR) is extraordinary high. The APR of Bank of China with installment less than 12 month is 4.35%, and it with installment less than 5 years is just 4.75%. However, the APR of JD Baitiao with 12 months inatllment term can reach at least 10.89%, and it with 24 months can achieve 11.13% or higher (6.38% higher than borrowing money from Bank of China). It is a negative signal for consumer to use it because the APR of JD Baitiao is extremely high. However, it indicates that investors can gain high profit in this situation at the same time.

Table 3: The installment Interest Schedule

The Installment Interest Schedule			
Installment Term	APR	Calculation Method	Monthly Interest Payment (Principal=100 CNY)
3 Month	$\geq 8.98\%$	$= \text{LPR} + 543 \text{ basis point} +$	36.32
4 Month	$\geq 9.56\%$	$= \text{LPR} + 601 \text{ basis point} +$	27.39
6 Month	$\geq 10.21\%$	$= \text{LPR} + 666 \text{ basis point} +$	18.36
8 Month	$\geq 10.56\%$	$= \text{LPR} + 701 \text{ basis point} +$	13.82

Table 3: (continued).

12 Month	$\geq 10.89\%$	$= \text{LPR} + 734 \text{ basis point} +$	9.24
24 Month	$\geq 11.13\%$	$= \text{LPR} + 758 \text{ basis point} +$	4.63

Source: JD Baitiao Platform

3.2.2. Revolving purchase structure of underlying asset

JD Baitiao securitization program uses a "dynamic asset pool" to enlarge the scale of JD Baitiao's special program. In the dynamic cycle of the pool, there is a Revolving purchase process. It refers to a mechanism in JD Baitiao Security where the funds from returning can be used to purchase additional new underlying assets, keeping the pool of JD Baitiao Securitization "revolving".

The dynamic cycle of the JD Baitiao asset pool and the product itself is divided into two main phases, namely, the revolving period and the distribution period. This overall cycle term is 2 years, and it adopts a "12+12" model:

In the first 12 months of the revolving period, the interest of the Priority 01 investors is paid according to the contract, and the recovered funds are continued to invest in new underlying assets. In the next 12 months of distribution period, the principal and interest of Priority 01 Securities and Priority 02 Securities are paid, and the remaining assets are paid to the subprime Securities.

Structure of Dynamic Asset Pool

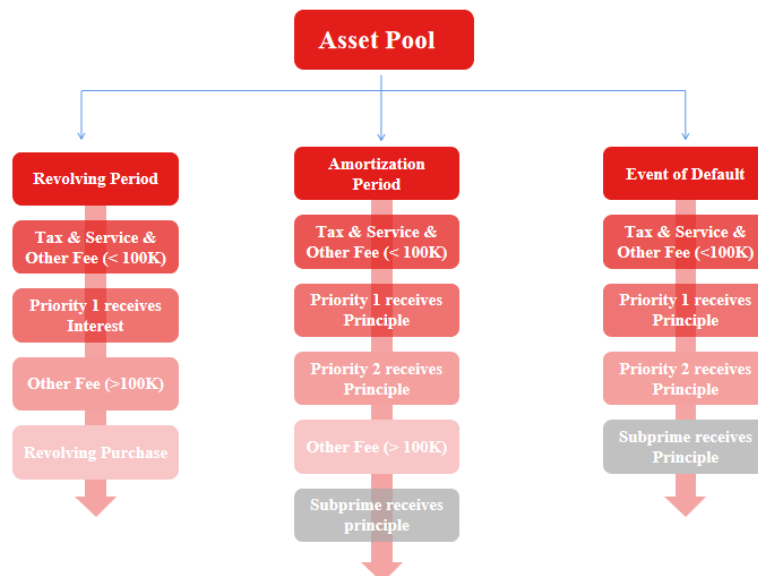


Figure 2: Structure of Dynamic Asset Pool

Source: Shi Xiuying. Research on the Path and Effect of Internet Consumer Credit Asset securitization -- Taking Jingdong Baitiao as an example[D]. Southwest University of Finance and Economics, 2022.DOI:10.27412/d.cnki.gxncu.2022.000337.

3.2.3. The Issuing Scale of Underlying Asset

Securitization of JD Baitiao was officially listed on the Shenzhen Stock Exchange in 2015. As can be seen from Figure 5, its issue size has remained above 0.5 billion RMB per issue. As can be seen from Figure 6, from 2015 to 2017, the issuance of JD Baitiao securitization showed an upward trend and

reached a peak of nearly 20 billion yuan. It started to decline in the following two years (2018 and 2019). It then rises again and reaches a peak of 35 billion yuan in 2020 and then decline again.

In terms of cumulative issuance, JD Baitiao ABS reflect two periods (2015 to 2019 and 2019 to 2023) of smoother growth, using 2019 as the dividing line. The final total issuance volume could be up to 125 billion RMB cumulatively. It shows that market has positive feedback about the JD Baitiao securitization and the company's intense desire of financing.

(1) The reason of second decrease

Due to the Ant Financial incident, the regulatory system interviewed 13 Internet financial institutions at the end of April 2021. It directly affected the reduction of consumer loans from several Internet financial products, including JD Baitiao Securitization. Therefore, the issuing scale of JD Baitiao securitization slowing from 2021 to 2023. Its issuance size is in line with the issuance size of Internet financial consumer loan securities.

(2) Possible Future Trending

Because of the regulation on internet financial consumer loans securitization, in the future, it is possible that JD Baitiao securitization, or securitization of other similar Internet loan products, will eventually cooperate with banks or other financial institution to issue their ABS.

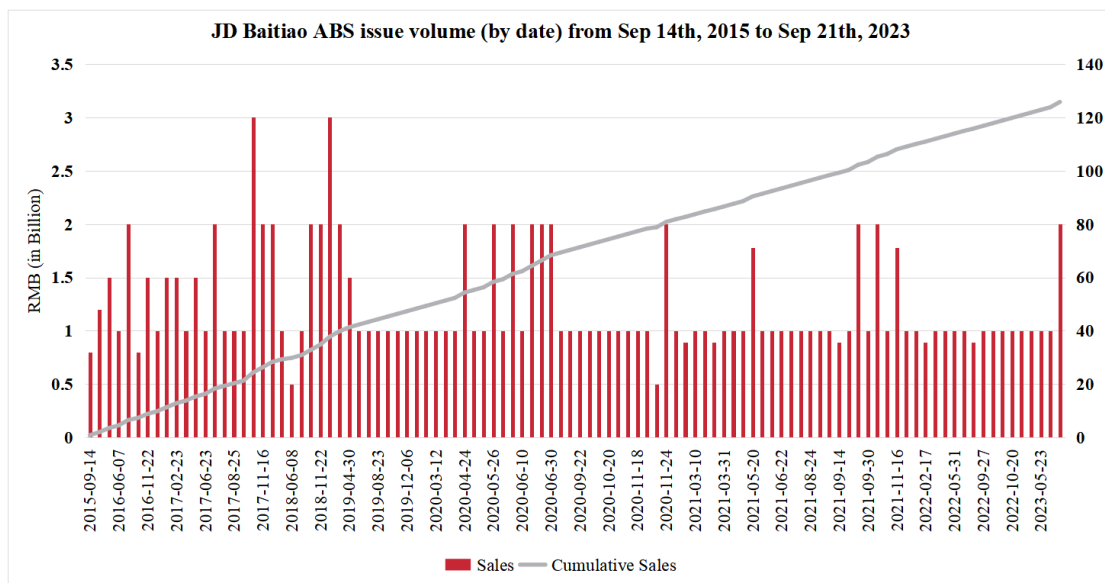


Figure 3: JD Baitiao securitization issue volume (by date) from Sep 14th, 2015 to Sep 21th, 2023

Source: Qiyeyujingtong

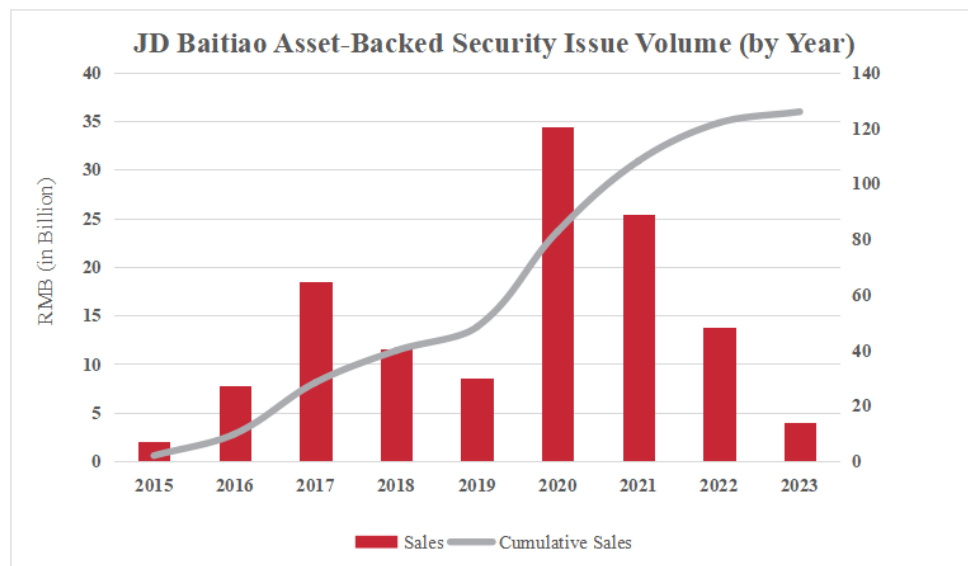


Figure 4: JD Baitiao securitization sales volume (by Year) from 2015 to 2023
Source: Qiyejingtong

3.2.4. The Distribution of Asset Pool

(1) By principle outstanding

This graph describes in the asset pool, the underlying asset can be divided into 6 groups based on their principle outstanding. The amount of each group are presented in dollars in million.

According to Figure 7, almost 65% of underlying asset are less than 3K in the asset pool. It indicates that consumers of JD Baitiao can comparably easily pay back and are likely to payback early instead of repaying in 2 years monthly. Therefore, a revolving period of securitization is inevitable.

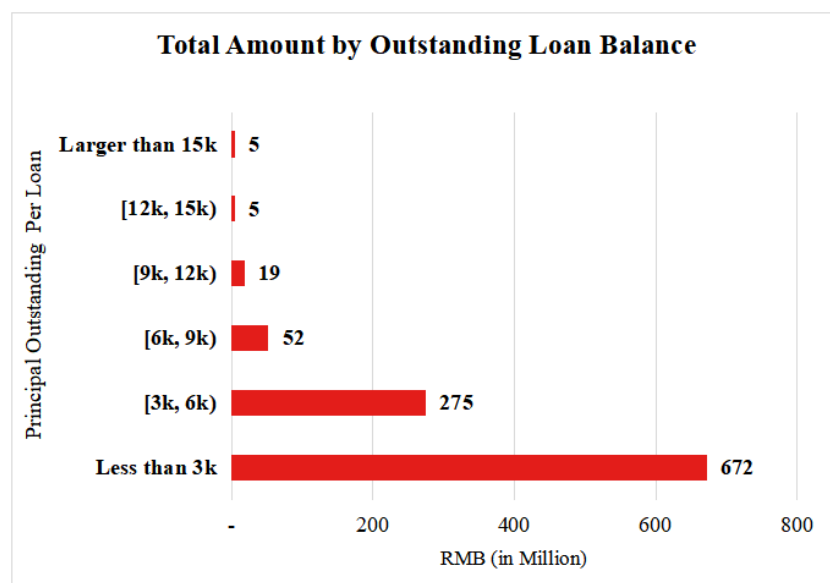


Figure 5: Total Amount by Outstanding Loan Balance

Source: Beijing Jingdong Century Trade Co., LTD The second phase of Jingdong Baitiao, No. 3 East Road, 2021 Asset-backed commercial paper offering prospectus

(2) By day past due

This graph describes in the asset pool, the underlying asset can be divided into 5 groups based on their days past due. The amount of each group are presented in dollars in million.

Shown in Figure 8, The “no overdue” occupy around 99% of the asset pool, which is 1 billion Yuan. (The overdue interest rate is 0.015% of the balance per day after due date.) It demonstrates a healthy asset pool without much risky and undesirable defaulted asset.

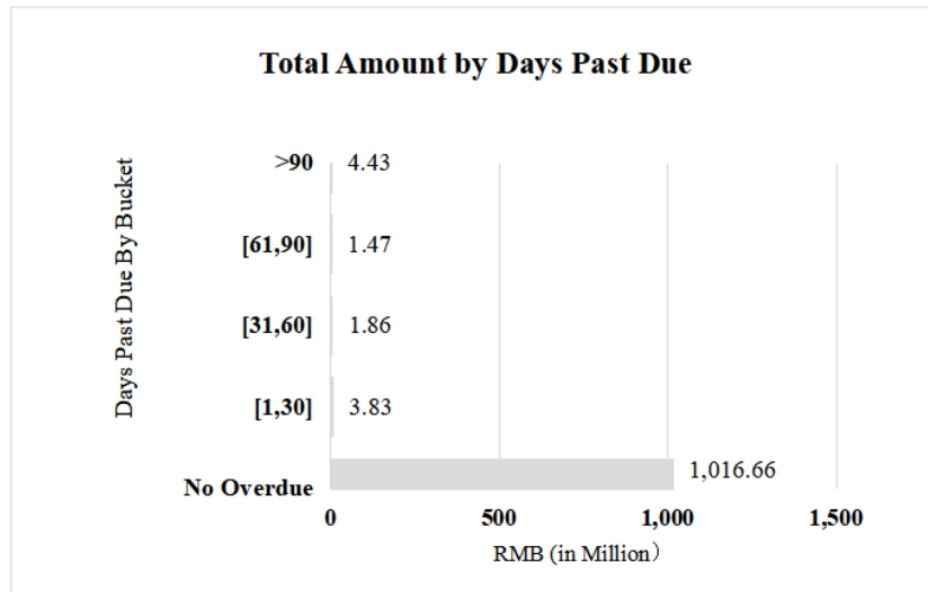


Figure 6: Total Amount by Days Past Due

Source: Beijing Jingdong Century Trade Co., LTD The second phase of Jingdong Baitiao, No. 3 East Road, 2021 Asset-backed commercial paper offering prospectus

(2) By credit scoreclass

This graph describes in the asset pool, the underlying asset can be divided into 4 groups based on their credit level. Level 1 is the amount of underlying asset hold by Baitiao consumer who have default possibility <1.5%. Level 2 is with default possibility <5.9%; level 3 is with default possibility <15%; level 4 is with default possibility <33%. There is no underlying asset is belong to level 5, which is with default possibility >33%. The amount of each group are presented in dollars in million.

Based on Figure 9, Level 1 are JD Baitiao Consumer who have the lowest default possibility of repayment (<1.5%). And Level 4 are JD Baitiao Consumer who have the highest default possibility of repayment (>15% & <33%). It is obvious that loans lent to JD Baitiao consumers who are rated to “Level 2” and “Level 3” are the main portion of the asset pool. Both of them occupy nearly 97% of the total asset pool.

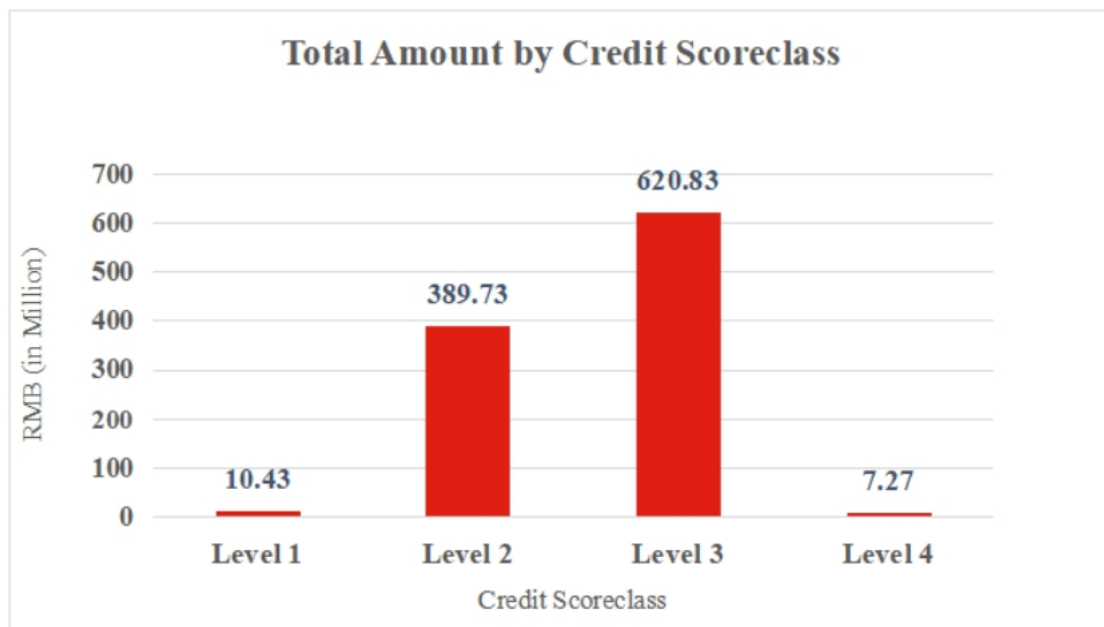


Figure 7: Total Amount by Credit Scoreclass

Source: Beijing Jingdong Century Trade Co., LTD The second phase of Jingdong Baitiao, No. 3 East Road, 2021 Asset-backed commercial paper offering prospectus

3.3. Tranching Of Securitization

The products issued by JD Baitiao securitization are categorized according to the credit status of the product as a whole. Depending on the risk, yield, etc., the classification of JD Baitiao Securitization products mainly includes priority 01 asset-backed securities, priority 02 asset-backed securities and subprime asset-backed securities.

Most of the securities are structured as priority 01 asset-backed securities, priority 02 asset-backed securities and subprime asset-backed securities are 89%, 6%, 5% in ratio.

Table 4: The tranching of JD securitization

Grade	Senior Tranches A		Senior Tranches B		MezzanineTranches		Subordinated securities	
Structure	Proportion	Yield	Proportion	Yield	Proportion	Yield	Proportion	Yield
24 Months	80.70%	5.40%	5.50%	5.80%	4.30%	7.50%	9.5%	/
12 Months	89%		3.30%		6%	6.50%	5%	/

(1) Provide diversified risk products to meet investor preferences.

JD asset-backed special plans usually divide securities into three levels: priority, subordinate and intermediate. The percentage and expected yield of different products vary. Priority grade accounts for about 80%, with an expected yield of about 5%; intermediate grade accounts for about 10%, with an expected yield of about 7%; and subordinate grade accounts for about 10%, with an expected return on the remaining funds. The maturity structure is generally available in 24month and 12month.

Take an example of JD Baitiao in 2015. In 2015, JD Baitiao divided the asset-backed securities of accounts receivable bonds into three types of asset-backed securities, priority 01, priority 02 and

subordinated asset securities with a ratio of 75:13:12. The scale of priority 01 is 600 million yuan, the expected rate of return is 5.1%, the circulation period pays interest on a quarterly basis, the distribution period pays interest on a monthly basis; The total scale of the priority 02 level is 104 million yuan, and the expected return rate is 7.3%; The total size of the subordinate asset-backed securities is 96 million yuan, without an expected rate of return, and the underlying sponsor (Jingdong) will receive all the remaining income when it expires.

Different types of securities are suitable for investors with different risk preferences, e.g. the lowest risk preferred A and B grades are suitable for risk-averse people, the intermediate grade is suitable for people with medium risk appetite, and the highest risk subordinate grade is suitable for risk lovers. Diversified investment portfolios can diversify risks and meet investors' needs.

(2) Diversification of securities is the key to reducing investment risk.

According to the asset portfolio theory, with a wide variety of securities, non-systematic risk naturally drops. Asset securitization projects skillfully use the underlying assets to reorganize into securities of different risk levels, providing investors lots of choices^[6]. Investors can select different types and ratios of securities according to their personal preferences to build a diversified portfolio. How to combine own portfolio needs to consider the risk tolerance and target rate of return. For example, I am an insurance style person, I will choose to hold priority 1 and a certain amount of priority 2, so I will not hold high-risk bonds.

Compared with a single investment, a diversified portfolio reduces risk and helps investors diversify risk. JD Baijiao special program usually set up three types of products to choose from, investors can invest in a project in the portfolio, not only to reduce investment risk, but also to save the cost of time to choose, and improve the efficiency of the investment.

3.4. Credit Enhancement

The purpose for this arrangement of priority is for a credit enhancement. In the event of default of the underlying assets, the loss will be borne by the subordinated assets first, which can ensure the interests of other investors. Because the subordinated securities are generally purchased and assumed by the original equity holders themselves. Generally, in the case of distribution of proceeds and early repayment of principal, priority is given to early repayment of senior securitized assets. This avoids a reduction in the size of the asset pool after the subordinated securities have been repaid, and a decrease in the guarantee capacity for the senior securities.

In the JD Baitiao Securitization, the priority 02 asset-backed securities provide internal credit enhancement for the priority 01 securities. Similarly, the subordinated securities provide internal credit enhancement for the priority 02 and the priority 01 securities, which protects the interests of investors to a certain extent.

By calculating the expected rate of return, subprime and priority 02 asset-backed securities can provide approximately 11% credit protection for priority 01 securities in general, while subprime securities can provide approximately 5% credit protection for priority 02 asset-backed securities.

4. Analysis of asset securitization effect on JDCT

4.1. Positive impact shown on the financial performance

The asset securitization of JD Baitiao has improved the liquidity of its assets and made borrowing more convenient. This convenient borrowing method has attracted many people to shop on JD. With the continuous expansion of JD's scale and the diversification of its products, consumer shopping demand has been further stimulated, resulting in an ongoing increase in the number of users of JD Baitiao and a corresponding rise in the balance of its accounts receivable, providing a stable source of funds for JD.

Table 5: 2018-2021 Accounts receivable balance, NPR and ODR

	2018	2019	2020	2021
Account receivable (billion yuan)	34.49	44.12	59.24	70.48
NPR(%)	0.48	0.57	0.51	0.43
ODR(%)	1.56	1.93	1.24	1.15

Source: Beijing Jingdong Century Trade Co., LTD The second phase of Jingdong Baitiao, No. 3 East Road, 2021 Asset-backed commercial paper offering prospectus

Notes: NPR is non-performing ratio and ODR is overdue rate

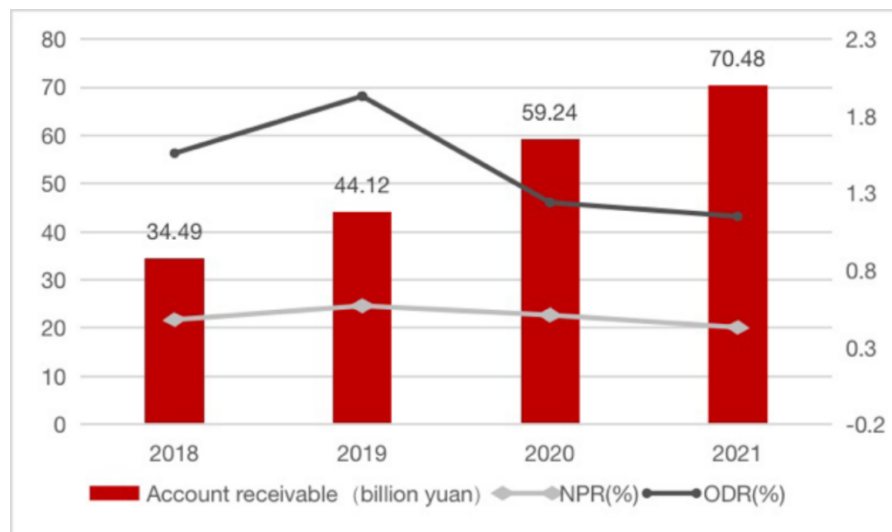


Figure 8: 2018-2021 Accounts receivable balance, NPR and ODR

Source: Beijing Jingdong Century Trade Co., LTD The second phase of Jingdong Baitiao, No. 3 East Road, 2021 Asset-backed commercial paper offering prospectus

(1) Accounts receivable balance

The balance of JD Baitiao's accounts receivable has significantly increased in the past few years, indicating that more users are inclined to use JD Baitiao for consumption and the company's sales have also increased. From 2018 to 2020, the outstanding balance of Jingdong baitiao increased by about 26 billion yuan (from 34 billion yuan to 60 billion yuan). From 2020 to 2021, it increased by another about 10 billion yuan (from 60 billion yuan to 70 billion yuan). This indicates that the company expanded its business scale during this period or that both the frequency and amount of use of JD Baitiao increased. Although the outstanding balance of accounts receivable is increasing, its growth rate is slowing down year by year, which may be due to the company taking measures to manage its risks, such as raising user credit rating requirements or cooperating with financial institutions to provide more stable sources of funds. Jingdong has used asset securitization to list out assets of Jingdong baitiao, with the proportion of assets realized through asset securitization accounting for over 80% as of June 30, 2020. Through asset securitization, Jingdong has achieved asset circulation and obtained more liquidity funds.

(2) Non-performing ratio (NPR)

From the end of 2018 to the end of 2020, the non-performing ratio of JD Baitiao declined from 0.48% to 0.51%, and then to 0.43%. As of June 30, 2021, the non-performing ratio was 0.43%, a decrease of 0.08 % compared with the end of 2020. This shows that Jingdong baitiao has made significant progress in risk control and effectively reduced the non-performing rate.

(3) Overdue(default) rate (ODR)

At the end of 2018, the overdue rate of JD Baitiao accounts receivable was 1.56%. By the end of 2020, the overdue rate dropped to 1.24%, and then to 1.15%. As of June 30, 2021, the overdue rate was 1.15%, a decrease of 0.09 percentage points compared with the end of 2020. This demonstrates that JD Baitiao has also made worthy progress in collections management and effectively reduced the overdue rate.

(4) Balance of accounts receivable and user proportion

As of June 30, 2021, the outstanding balance of JD Baitiao's accounts receivable has increased to 704.84 billion yuan, an increase of 18.98% compared with the end of 2020. At the same time, the total number of users whose credit rating is at Levels 1-Level 4 accounts for no less than 90% of the total user base. This indicates that both the business scale and user quality of Jingdong baitiao have made significant progress.

4.2. Potential Risk

4.2.1. Investment Risk for Investors

(1) Interest rate risk

Market interest rates will fluctuate with changes in the macroeconomic environment. This may affect the returns of investors. This risk is manifested by the fact that when the market interest rate rises, the relative level of return of the asset-backed commercial paper will be reduced. This will in turn jeopardizes investors' returns.

(2) Liquidity risk

The Internet financial consumer loans ABS will be circulated in the security market. However, due to an inactive market where counterparties are limited, the holders of JD Baitiao ABS will be exposed to the risk of loss if they are unable to sell the ABS at a fair price within a reasonable period of time.

(3) Risk of changes in credit ratings

The rating criteria of JD Baitiao Securities relies mainly on the internal credit enhancement.

The internal credit enhancement is not comprehensive enough to evaluate a JD Baitiao consumer's credibility. For instance, if one's financial condition goes broke, it will not be shown on the credit score in JD Baitiao platform because this situation can not be found in the credit evaluation criteria.

(4) Risk of lower weighted average interest rate of underlying assets

According to the data disclosed in the rating report, the historical average annualized yield of the asset pool is 8.71%, and the proportion of accounts receivable without fees in the asset pool is 56.49%. In this case, the eventual interest that investors can gain will be limited.

(5) Operational risk due to high-frequency recurring purchases

The frequency of revolving purchase in JD Baitiao securitization is on a daily basis. The revolving purchase operation is initiated by the SPV, and revolving purchase are completed after review by the manager of SPV. The high frequency and heavy workload of the circular purchase operation may give rise to operational risks.

4.2.2. Financial Risks for Company

(1) Risk of higher liability-asset ratio

From the chart, it shows that even though its business operations were normal, the Company's liability-asset ratio still remained high. The high liability-asset ratio is related to the characteristics of the retail industry. Due to the expansion of business scale, the major accounting subjects such as ABS receivable, accounts receivable, and other major accounting subjects have grown faster. Mostly operating liabilities lead to a larger increase in the company's debt scale and a higher liability-asset ratio.

The company currently has good commercial credit. However, if JDCT is unable to maintain a relatively reasonable liability-asset ratio in the future, and at the same time the company's sales returns slow down, the company will face greater financial pressure. This will have a certain impact on the operation of JDCT, which in turn will have an impact on the JD Baitiao securitization itself.

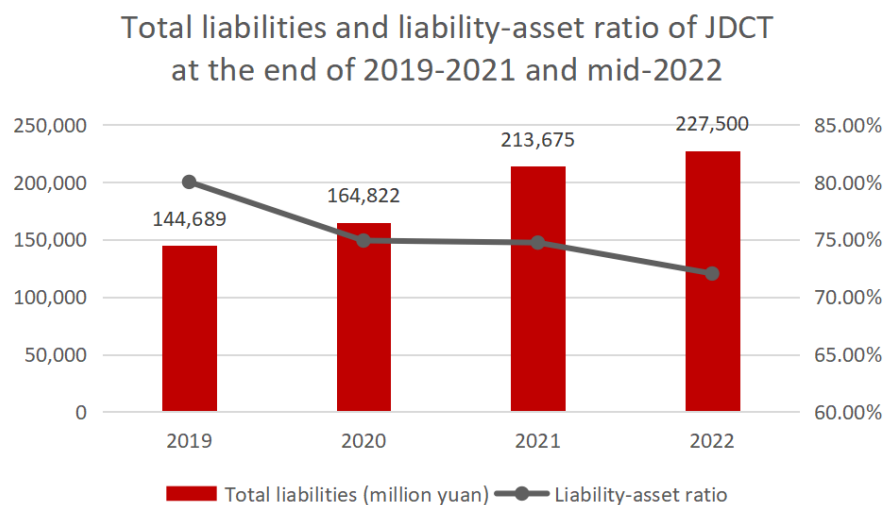


Figure 9: Total liabilities and liability-asset ratio of JDCT at the end of 2019-2021 and mid-2022
Source: financial reports disclosed by Beijing Jingdong Century Trading Co.

(2) Large proportion of accounts receivable and default risk

The accounts receivable of JDCT were mainly composed by the money borrowed by consumers on JD Baitiao. According to credit scoring, JD Baitiao is mainly oriented to high-quality consumers with high credit score. These consumers are scattered and chose a smaller number of installment, so the overall default risk is low. However, with the expansion of the Company's business scale, the scale of accounts receivable is likely to increase, while the users of JD Baitiao are wide-ranging and have different performance on repayment. As a result, default risk may arise, which will have a certain impact on Jingdong Century Trading's business operations.

Table 6: Accounts receivable of Jingdong Century Trade at the end of 2019-2021 and in 2022 and the ratio of total assets

	2019	2020	2021	2022
Total Assets (million yuan)	180,822	221,171	285,923	315,805
Accounts Receivable /Total Asset	2.79%	1.93%	2.14%	2.46%

Source: Financial reports disclosed by Beijing Jingdong Century Trading Co.

(3) Risk of high proportion of current liabilities

As at the end of 2019-2021 and mid-2022, the current liabilities of JDCT were 140 billion yuan, 160 billion yuan, 200 billion yuan and 220 billion yuan, respectively. The current liability proportion of total liabilities was 99.02%, 99.10%, 96.95% and 96.20%, respectively, with current liabilities accounting for a relatively high proportion. The main components of current liabilities are accounts receivable, ABS receivable and short-term debts due within one year. The structure of the Company's current liabilities is related to the characteristics of the Internet retail industry. The company implements a strict internal financial management system and has an effective liquidity management mechanism. At the same time, JDCT's financing channels are smooth, and the overall debt servicing ability is strong. However, we cannot rule out the possibility that future of the credit market and capital market financing policy has been a huge adverse change in the subsequent expansion of business due to liquidity shortages. This may have a certain impact on the solvency of the JDCT.

(4) Risk of negative cash flow from investing activities

From 2019 to the end of 2022 and in mid-2022, the net cash flow from investment activities of JDCT will be -20.438 billion yuan, -20.423 billion yuan, -33.647 billion yuan and -2.36 billion yuan, respectively. The net cash flow from investment activities of JDCT has been consistently negative in recent years. It is mainly due to the fact that the cash paid by the company for the purchase and construction of fixed assets, intangible assets and long-term equity investments continues to be at a high level. At the same time, the company puts in efforts to achieve long-term gains, but recovery of investment scale is small, which resulting in cash inflow from investing activities is much smaller than cash outflow.

From the perspective of the current situation of the industry, the company needs to invest a lot of money in technology and equipment upgrades in order to maintain stable development under the new retail pattern. Therefore, the company's cash outflow from investing activities has continued to be negative in the past three years. With the improvement of the logistics network, the capital demand for investment activities of JDCT may be reduced, so that the net cash flow from investing activities will rebound.

4.2.3. Operating Risks for Company

(1) Risk of macroeconomic cyclical fluctuations

The e-commerce retail industry, in which the issuer is located is an emerging industry derived from the Internet, has developed into an industry benchmark and is closely related to the life of residents. The development level of the whole industry is highly correlated with the development status of the national economy. Macroeconomic development conditions and development trends have an important impact on the development of the industry. At the same time, it is also affected by the cyclical fluctuations of the economy.

When the economy is in a downturn, the demand of residents for home appliances and department stores decreases, and the business volume of the industry decreases. The retail industry is more sensitive to macroeconomic changes. The trend of international and domestic economic development may have an impact on the development and profitability of the sponsor organization's e-tailing industry.

(2) Risk of increased competition in the industry in the future

The originator JDCT is the largest comprehensive e-commerce enterprise in China, with a share of nearly half of the domestic B2C self-operated market. It dominates the online 3C product sales market, with the sales scope realizing full category coverage of apparel, mother and baby goods, books and audio-visual products, automobile supplies and beverages and food.

JD's business includes self-operated and open platforms. Under the self-operated model, JD purchases products from suppliers and sells them directly to end-consumers, contributing the majority

of the turnover. On the open platform, third-party sellers display and sell their products through the operating platforms provided by JD's website. Then they pay platform royalties and commissions to the originating organizations. As a result of the current weak domestic macro-economy, the year-on-year sales growth rate of core categories such as domestic home appliances and cell phones has slightly declined. While competition in the industry has intensified, and there is a risk of a decline in the market share of the originating organization as later entrants join the market. It needs to meet the challenges of business operation, profitability and the formulation of marketing strategies.

(3) Risk of information technology change

With the development of science and technology, Internet technology is gradually more and more developed. The construction and protection of platforms are becoming more and more complicated, and the channels for e-tailing enterprises to contact consumers have been expanded from PC terminals to mobile device terminals, applications, smart TVs, etc [7,8]. In the future, advances in information technology will continue to revolutionize the e-tailing industry. The advancement of information technology will continue to revolutionize the business model and competitive landscape of the e-tailing industry in the future [9]. If the Company fails to respond to the development of information technology within a timely manner, such as adjusting its business model to develop and utilizing new sales channels and tools, and improve its platforms and websites, it may face the risk of loss of customers and decline in market share. It in turn may affect the Company's operating results.

5. Uniqueness

5.1. Comparison between traditional security Financing and traditional ABS financing

(1) Difficulty and Cost comparison

The traditional method of securities financing refers to the issuance of securities by enterprises or government agencies to raise funds from the public through the market. This is more demanding on the credit of the enterprise's own assets, and the financing cost is high and difficult.

Asset securitization, a direct financing tool, is more convenient, less difficult and less costly to operate. In addition, asset securitization can convert enterprise's assets into liquidity, improve the efficiency of enterprise's capital utilization, and further reduce the cost of financing [10].

(2) Risk comparison

Moreover, excessive use of traditional debt financing will not only increase the company's gearing level, but also pose a threat to its future sustainable development. For investors, the risk of security financing mainly depends on the credit status of the issuer, and if the issuer defaults, investors may face losses.

Credit enhancement and risk segregation, two processes unique to asset securitization, make risk reduction possible. ABS reduces investor risk by diversifying a wide range of assets, and even if some assets default, the risk of the entire portfolio is diversified.

(3) Maturity of the market(time it exists)

The traditional securitization market is relatively mature, and issuance and trading are relatively easy for investors to obtain liquidity and returns. The ABS market, on the other hand, is relatively new and issuance and trading are relatively complex, and investors need to assess and monitor risks more carefully [11].

Table 7: Comparison between Traditional Security Financing and Traditional ABS Financing

	Traditional Security Financing	Traditional ABS Financing
Financing Difficulty	High	Low
Financing Cost	High	Low
Risk	High	High
Market Maturity	>30years	<20years

5.2. Comparison between Traditional ABS and JD Baitiao ABS

(1) Time Length

Traditional ABS products often have a very long time cycle and span, and the requirement for time cost is high, mainly due to the long construction cycle of issuance channels. In order to solve this problem, JD Baitiao Security builds a reasonable transaction structure through circular design and other methods, which makes it possible to shorten the one-time transaction cycle.

(2) Credit Enhancement system

In China's asset-debtization market, the corporate credit rating system is not perfect enough, there are fewer rating agencies that can provide reliable credit rating services and certain limitations in the rating standards and methods. Therefore, investors lack reliable reference basis and face higher investment risks when making investment decisions.

Compared with traditional asset securitization, in terms of credit enhancement measures, JD Baitiao ABS relies purely on internal credit enhancement, without adding relevant external credit enhancement. Doing so allows JD Financial to well export its own risk control model and big data system to the real financial market.

Table 8: Comparison between Traditional ABS and JD Baitiao ABS

	Traditional ABS	JD Baitiao ABS
Time Length	Long	Short
Credit Enhancement	External+Internal	Internal Mainly

6. Conclusion

In the current economic environment and the trend of the Internet era, JD Baitiao playing a representative role in the area of the securitization of internet consumer finance assets in China. Its emergence offers a new way of spending, and also broadens Jingdong's own financing channels. It creates a new idea of financial products for the securities market - converting corporate accounts receivable into securities, further enriching the capital market.

In this research, it is analyzed the structure of JD Baitiao and its securitization process, which eventually indicates its returns and risks. We believe that the launch of this asset securitization has timely solved many problems such as JD's own asset turnover rate, significantly improved the liquidity of JD online shopping platform's assets. Meanwhile, it provided the securities market with a lower risk and high return on investment options. But at the same time, asset securitization itself will also bring certain risks. For example, asset securitization in the Internet environment relies too much on user information provided by big data, that is, not conducive to government supervision, but also to the enterprise's own operation and management of the increased risk. But overall, asset

securitization of JD Baitiao is an innovative financing method, which provides high profit for investors but also enhances the asset flow and operation ability of JD online shopping platform.

JD closely integrates asset securitization with Internet finance, and collects user data more extensively and portrays user profiles more accurately than traditional financial institutions. This is significance for promoting the healthy development of asset securitization of Internet financial consumer loans in China, and should also pay more attention to the government's supervision of the asset securitization market. As government regulation becomes stricter and tighter year by year, the online loan securitization discussed in this research will gradually cooperate more with banks or professional financial institutions to jointly promote loan services.

References

- [1] J. Li, *Reflections on Internet Finance*[J/OL]. *Management World* 7 (2015) 1-7+16. DOI: <https://doi.org/10.19744/j.cnki.11-1235/f.2015.07.002>.
- [2] S. Milcheva, H. Falkenbach, H. Markmann, *Bank liquidity management through the issuance of bonds in the aftermath of the global financial crisis*[J/OL]. *Research in International Business and Finance* 48 (2019) 32-47. DOI: <https://doi.org/10.1016/j.ribaf.2018.12.003>.
- [3] P. Wang, et.al, *Research on the development status, problems and countermeasures of internet consumer finance*[J/OL]. *Journal of Virtual Reality and Artificial Intelligence* 1(1) (2020) 1-4. DOI: <https://doi.org/10.23977/jvrai.2020.010101>.
- [4] L. Paul, *Financialization and the consumer credit boom*[J/OL]. *Competition & change* 12(2) (2008) 133-147. DOI: <https://doi.org/10.1179/102452908X28979>.
- [5] C. Er, *Internet Consumer Finance: Trends, Challenges and Countermeasures*[J/OL]. *Southern Finance* 3 (2018): 85-92. DOI: <https://doi.org/10.3969/j.issn.1007-9041.2018.03.011>.
- [6] G.M. Constantinides, A.G. Mallaris, *Portfolio theory*[J/OL]. *Handbooks in operations research and management science* 9 (1999) 1-30. DOI: [https://doi.org/10.1016/S0927-0507\(05\)80045-3](https://doi.org/10.1016/S0927-0507(05)80045-3).
- [7] C. Steinfield, T. Adelaar, F. Liu, *Click and mortar strategies viewed from the web: a content analysis of features illustrating integration between retailers' online and offline presence*[J/OL]. *Electronic Markets* 15(3) (2005) 199-212. DOI: <https://doi.org/10.1080/10196780500208632>.
- [8] C.H. Apigian, B.S. Raug-nathan, T. Raug-nathan, *Strategic profiles and Internet Performance: An empirical investigation into the development of a strategic Internet system*[J/OL]. *Information & Management* 43(4) (2006) 455-468. DOI: <https://doi.org/10.1016/j.im.2005.11.003>.
- [9] C. Mcgrath, D. Zell, *The future of innovation diffusion research and its implications for management: A conversation with Everett Rogers*[J/OL]. *Journal of Management Inquiry* 10(4) (2001) 386-391. DOI: <https://doi.org/10.1177/1056492601104012>.
- [10] A.A. Jobst, *Asset securitization as a risk management and funding tool: What small firms need to know*[J/OL]. *Managerial finance* 32(9) (2006): 731-760. DOI: <https://doi.org/10.1108/03074350610681943>.
- [11] N. Friewald C.A. Hennessy, R. Jankowitsch, *Secondary market liquidity and security design: Theory and evidence from abs markets*[J/OL]. *The Review of Financial Studies* 29(5) (2016) 1254-1290. DOI: <https://doi.org/10.1093/rfs/hhv128>.