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Empirical Understanding of Chinese Markets Financialization

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Abstract: This research study delves into the impact of financialization on China's economy, focusing on three potential crowding-off effects resulting from the country's growing financial sector. Firstly, the study examines the "Financial Resource Diversion" effect, investigating whether the financial sector's expansion has overshadowed China's real economy. Secondly, the research explores the impact on households. It is based on the theory that the financialization of the market could have external effects on household real wages. The emergence of China's middle class may lead workers to rely more on transferring their labor to financial assets. Employing empirical analysis, the article examines the relationship between household financialization and labor income to analyze the potential trade-offs between financialization and real labor income. The study then discusses the potential impact of capital accumulation resulting from over-financialization in China. It investigates the relationship between the financial sector and the overall economic trends in the country. The primary objective of this study is to highlight the problematic nature of financialization.

Keywords: China, financialization, time-series analysis

1. Introduction

1.1. Research Background

In recent decades, the global economy has experienced a significant transformation characterized by the increasing prominence of financial markets and the growing influence of financial institutions. This phenomenon, known as financialization, has gained attention and evolved from its roots in Marxist economics, with later scholars emphasizing the role of rentiers in the process. Financialization is marked by a shift towards finance-driven profits at the expense of traditional production and industrial profits, leading to sluggish productivity growth and increased wealth concentration [1]. The rise of financialization became evident after the 1970s when the liberalization of the financial industry paved the way for three key trends: a slowdown in production growth, the emergence of monopolistic global corporations, and the dominance of the financial sector over significant portions of the economy [2]. China, with its unique path of economic development and financial market structure, experienced intensified financial market growth after opening up in the 1980s. According to data from the National Bureau of Statistics in China, the value added by the financial sector to the economy has grown exponentially over the years, now accounting for a considerable share of the GDP growth rate, similar to major financial powers like the US and the UK.

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However, scholars have raised concerns about financialization in China as the economy's growth shifted from primary and secondary industries to tertiary industries. This shift in economic structure has significant implications for the everyday lives of citizens, and it becomes crucial to analyze such a transformation comprehensively.

The narrative surrounding financialization in China is multifaceted, with scholars highlighting various problematic scenarios resulting from uneven growth across different levels of society. Studies have revealed geographically uneven development of the financial market contributes to overall inequality, and research has explored the financialization of the housing market and the risks of a housing bubble [3,4]. While critics have pointed out these issues, the continuous growth of production and rising household incomes has somewhat overshadowed these concerns. However, the outbreak of the Covid-19 pandemic and its subsequent impact on China's economy brought about a slowdown in growth, which exposed some of the risks associated with financialization. This period of economic cool-down has created an opportunity for reflection on the rapid pursuit of economic growth and the need to reconsider more sustainable approaches. In the world, although discussions on financialization had predominantly occurred within the realm of radical economic theories, such as Marxian and Post-Keynesian economics, it was the subprime crisis of 2008 that propelled this enduring topic back into the mainstream economic discourse. Brenner provided an explanation for the profound link between the crisis and the trajectory of financialization [5]. In his study, he outlined how the high growth rates and intensified competition during the 1950s and 1960s squeezed profit rates for producers. As a result, only the surviving industries transformed into monopolies, obstructing further production growth. Simultaneously, the economy sought growth through monetary manipulations, such as exchange rate adjustments and the deregulation of inexpensive credit. However, these measures proved insufficient substitutes for the crucial role of production. Consequently, when the financial industry entered a contraction phase, underlying risks manifested and unraveled in rapid succession. While some proponents advocate for further financialization, citing empirical evidence suggesting that the growth of the financial industry can reduce inequality in nations, they often overlook the fact that the wealth accumulated in these "financialized" countries largely hinges on prior industrialization successes [6]. Nevertheless, the study of economic crises reveals a consistent pattern: while it is difficult to anticipate a crisis before it materializes, post-crisis, it becomes possible to devise alternative theories and propose better approaches. The major challenge for radical theorists, therefore, lies in empirically investigating and uncovering the long-term impacts of financialization, specifically pertaining to the labor side of the economy. Consequently, the objective of this study is to provide statistical evidence in support of the effects of financialization, serving as a foundation for informed recommendations and potential changes.

The study aims to delve into a fundamental question amidst the "gold rush" of financialization in China: What has fundamentally changed in terms of economic lives? By understanding the implications of financialization on various aspects of society and individuals' economic well-being, this research seeks to shed light on the long-term effects of financialization and contribute to the reconstruction of a healthier economic growth path for the future.

1.2. Literature Review

1.2.1. Financial Resource Division

Financialization has been widely observed to result in a process known as "financial resource division." As Crotty pointed out, non-financial corporations (NFCs) tend to divert their investments towards financial assets in pursuit of faster returns, particularly as the financial sector expands rapidly [7]. Duménil, G, and Lévy found that the growing financialization of the real economy leads NFCs to allocate more funds towards paying interest and dividends, leaving fewer resources available for

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real investment [8]. Empirical evidence from the US by Orhangazifurther supports the notion that financial investment can crowd out real investment [9].

Drawing from these insights, this study hypothesizes that China's economy may also experience similar effects of financialization, with finance potentially overshadowing the real economy. The research will analyze data from different industries' growth rates to identify correlations and investigate the impact of financial resource division on China's economic dynamics.

1.2.2. Financialization of Labor Income

The financialization of labor income is a significant aspect that emerged with the rise of financialization, as theorized by Lapavitsas [10]. With increased financial participation worldwide, this research posits that labor income has become integrated into the financial systems. Unlike the traditional capitalist model of finance, which relies on surplus values for investment, this new paradigm utilizes the direct wages of workers to fuel financial bubbles.

In China, the growing housing market has led more households to rely on mortgage loans to access housing market profits, mirroring Lapavitsas's ideas [11]. The study suggests that the vast profits from financial assets, including housing, have overshadowed labor income as the primary source of income for Chinese households. As a result, a crowding-out effect may occur in the labor market, where workers lose bargaining power for higher wages due to their increasing reliance on financial investments. Stagnant salaries may become correlated with the surge in financial income. To explore this hypothesis, the research will employ time-series models to forecast the relationship between wages in China and the growth of financial income and household leverage.

1.2.3. Financialization and Inequality

The correlation between income inequality and households' financial situation is very much tide with the broader context of financialization. De Vita provides evidence that household financialization exerts a positive and robustly significant impact on income inequality [12]. Duménil, G, and Lévy argue that the rentier class exploits financial capitalization to accumulate wealth, contributing to economic financialization [8]. This aligns with Piketty's argument that the increasing profits of the rentier class have led to significant global inequality [1].

2. Methodology

2.1. Data Collection

For this research, data from 1978 (or the earliest time of the record) will be collected from multiple sources to comprehensively analyze the impact of financialization on China's economy and inequality. The following data will be gathered:

Gross Domestic Product (GDP): GDP is a crucial macroeconomic indicator that measures the total economic output of a country. It provides an overview of the economic performance and growth trends in China.

Sectors' Value Added (Industry, Finance & Real Estate): These indices (of the previous year) represent the value added by different sectors, such as industry and finance & real estate, to the overall economy. They help assess the relative contributions of these sectors and their growth patterns.

Average Real Wage: These indices measure changes in real wages, accounting for inflation, and provide insights into the trends in workers' purchasing power and living standards.

Net Business Income of Urban Households: This data reflects the income earned by urban households from their business activities, which can include income generated from financial investments.

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Net Income from Property of Urban Households: This data represents the income received by urban households from property ownership, including rental income and capital gains from property assets.

Leverage Ratio of Households/Non-Financial Sector: The leverage ratio represents the extent to which households and the non-financial sector rely on debt to finance their assets. It offers insights into the level of financialization among households.

2.2. Data Editing

To measure the crowding-out effect resulting from financialization, a ratio between the value added by the finance sector and the real economy will be created. The formula for this ratio will be:

$$Financial - Industry\ Sector\ Ratio\ =\ (Value\ Added\ in\ Finance\ \&\ Real\ Estate)\ /\ (Value\ Added\ in\ Industry) \quad (1)$$

The Household leverage ratio, Financial & Property income and Overall financial asset values will be used to understand the impact of financialization on household's level,

2.3. Modeling

The VAR model is a powerful tool to explore the dynamic relationship between GDP and the Finance/Industry Ratio. It allows for the analysis of multiple time series variables, such as GDP and the Finance/Real Economy Ratio, and their mutual influence on each other over time. The equation for the VAR model is represented as follows:

$$Y(t)\ =\ c\ +\ A1\ *\ Y(t-1)\ +\ A2\ *\ Y(t-2) + \ldots + Ap\ *\ Y(t-p)\ +\ \varepsilon(t) \quad (2)$$

Where Y(t) is the vector of time series variables, including GDP and the Finance/Real Economy Ratio, at time t. c represents the constant term. A1, A2, ..., Ap are the coefficient matrices for lagged variables, capturing the impact of past values on the current values of GDP and the Finance/Industry Ratio. ε(t) is the error term at time t, representing the unexplained variation in the model. By implementing the VAR model, we aim to gain valuable insights into how changes in GDP are influenced by financial resource division, providing a deeper understanding of the effects of financialization on China's economic growth.

Similar modeling approaches will be employed to study the intricate relationship between wages and household financialization. The study will utilize households' real-estate and business income, leverage rate, and financial value added as indicators of financialization at the household level. This will help us analyze the dynamic interactions between household financial behavior and wage dynamics, contributing to a comprehensive examination of the impact of financialization on household income.

Additionally, a dynamic time series model will be constructed to explore the correlations between the value added by the financial sector and the Gini coefficient, which serves as a measure of income inequality. The dynamic nature of this model is crucial for unveiling time-varying relationships and understanding the complex interplay between financialization and income inequality, aligning perfectly with the research objective.

By employing these sophisticated modeling techniques, the author anticipates illuminating significant findings that will advance our understanding of the intricate connections between financialization and key economic factors, enabling informed policy recommendations for promoting sustainable and equitable economic growth in China.

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3. Empirically Analysis

A time series is said to be stationary if its statistical properties, such as mean, variance, and autocovariance, remain constant over time. The Augmented Dickey-Fuller (ADF) test is one of the most commonly used tests for stationarity. It examines whether a time series is non-stationary by testing the null hypothesis that a unit root is present (indicating non-stationarity). If the p-value of the ADF test is less than a chosen significance level (e.g., 0.05), we reject the null hypothesis, indicating that the series is stationary. Conversely, if the p-value is greater than the significance level, the author fail to reject the null hypothesis, indicating non-stationarity. For the raw data, the household income is non-stationary, thus the author implies first degree differencing, using the growth rate as the measurement. GDP also is non-stationary thus the author takes the index of GDP compare to last year as the differencing measure. The results of dot plot between GDP and Financial/Industry Ratio are show in Figure 1.

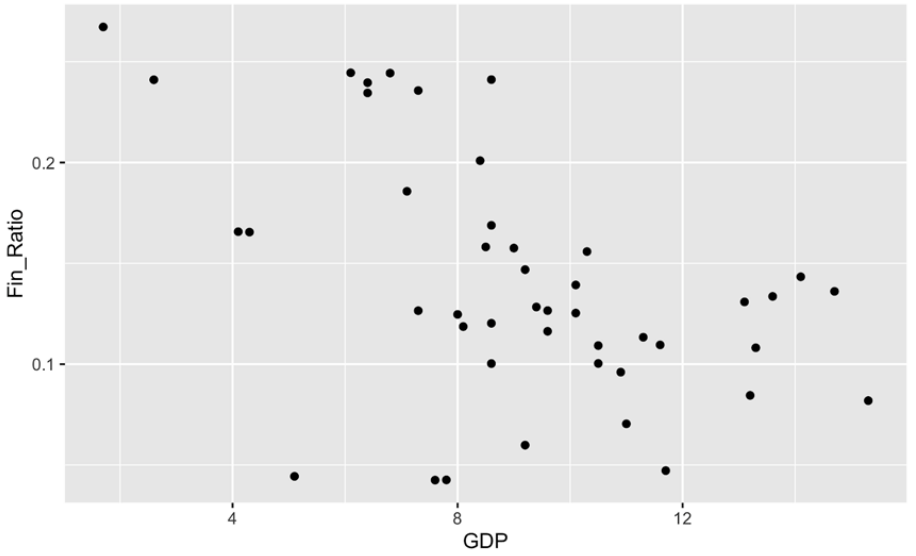

Figure 1:Dot plot between GDP and Financial/Industry Ratio

With lag selection, the study detects the following result (in Table 1).

Table 1: Suggested lag period.

AIC(n)	HQ(n)	SC(n)	FPE(n)
2	1	1	2

In this case the study uses 1 lag as our optimal Auto-Regress lag, using R, the VAR regression model can be analyzed.

$$GDP = gdp.l1 + ratio.l1 + const \quad (3)$$

Table 2:Summary of model (3).

	Estimate	Std. Error	t value	Pr (>t)
GDP(lag 1)	0.3984	0.1428	2.79	0.00797
Finance Ratio(Lag1)	-10.061	7.3218	1.37	0.17687
Constant	7.0804	2.0549	3.45	0.00133

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The result in Table 2 detects a negative relationship between the financial ratio and GDP growth rate. Initially, the Portmanteau Test (asymptotic) is used to test for serial correlation, with the result showing a Chi-squared value of 25.73, degrees of freedom (df) of 44, and a p-value of 0.9873. The high p-value suggests that there is no significant serial correlation in the data. Furthermore, the ARCH (multivariate) test is conducted to assess heteroscedasticity, yielding a Chi-squared value of 96, df of 108, and a p-value of 0.789, indicating the absence of significant heteroscedasticity.

To investigate causality between variables, the study performs the Granger test. The null hypothesis is that an increase in the financial ratio does not Granger-cause a drop in GDP. The p-value from the Granger causality test is larger than 0.05, suggesting no significant causal relationship between the variables over lagged periods. However, an interesting finding arises from the instant Granger test, which yields a p-value of 0.01. This implies that an instantaneous causal relationship might exist between the variables, suggesting that the relationship is more immediate and might not be fully captured over lagged time points. In the second regression, a similar approach is applied, but with multiple variances. The independent variables include housing and business income (growth), leverage rate, and value added in the financial sector. An optimal lag of 5 is determined for the model. The regression equation takes the form:

$$finance = wage.l1 + leverage.l1 + house.l1 + finance.l1 + wage.l2 + leverage.l2 + house.l2 + finance.l2 + wage.l3 + leverage.l3 + house.l3 + finance.l3 + wage.l4 + leverage.l4 + house.l4 + finance.l4 + wage.l5 + leverage.l5 + house.l5 + finance.l5 + const \quad (4)$$

The VAR regression has the correlation of the following, the correlation matrix of residuals results are show in Table 3.

Table 3:Correlation matrix of residuals.

	wage	leverage	House(income)	Finance(asset)
Wage	1.000	-0.17503	0.73156	-0.02358
leverage	-0.17503	1.00000	0.03016	0.70602
House(income)	0.73156	0.03016	1.00000	-0.08566
finance(asset)	-0.02358	0.70602	-0.08566	1.00000

The correlation of (4) suggests that leverage and financial growth have a negative impact on wages, while housing does not exhibit a significant relationship. However, when conducting the causality test, none of these variables show significant evidence of being the direct cause of falling or rising wages.

In conclusion, the statistical tests and causality analysis reveal complex dynamics between the variables under study. While serial correlation and heteroscedasticity are not significant, the Granger test indicates no causal relationship over lagged periods. However, the instant Granger test suggests the existence of an instantaneous causal link, highlighting the importance of considering immediate impacts. The regression analysis uncovers correlations between financial variables and wages but does not provide strong evidence of direct causality. These findings emphasize the need for further research to fully understand the nuanced relationships between financialization, economic variables, and wage dynamics.

Using the two models, this study conducts an in-depth analysis and visualizes the impulse response of two distinct effects resulting from the growing financial sector. The findings reveal a more direct negative impact of the financial sector's expansion on the general economy, leading to a reduction in

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GDP growth (Figure 2). Conversely, when examining the relationship with wages, the effect appears to fluctuate over time.

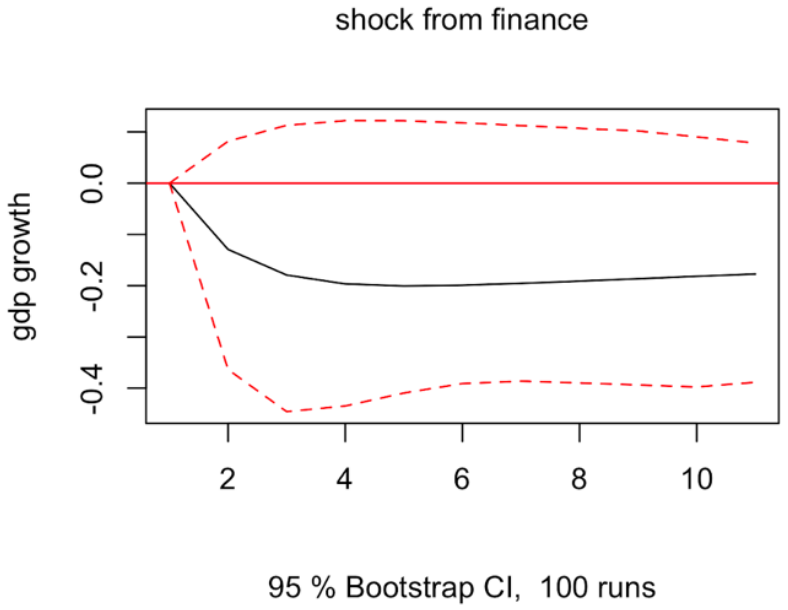

Figure 2: GDP growth rate after a shock (growth) in Financial sector.

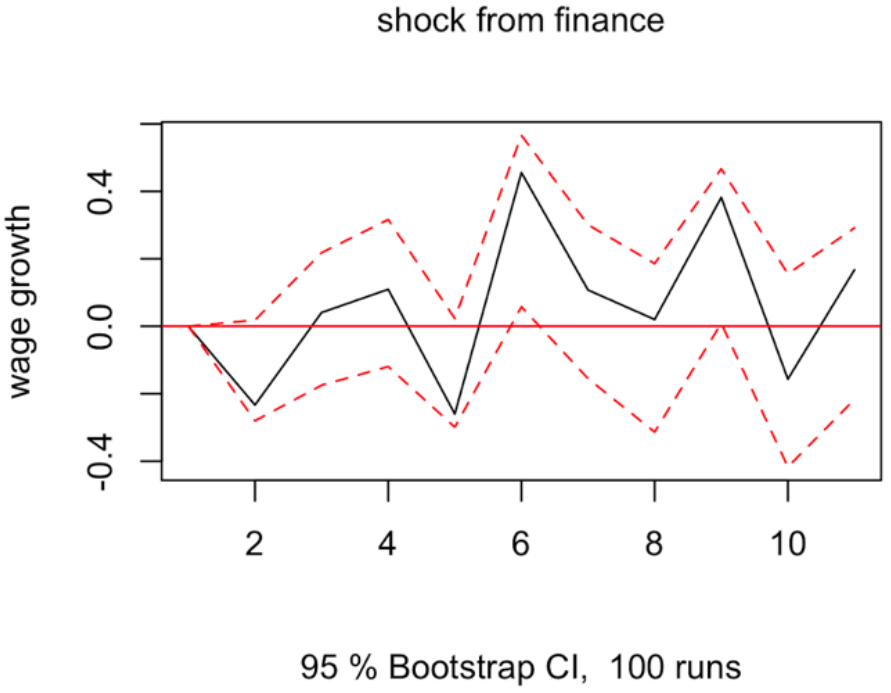

Figure 3: Wage growth rate after a household financial income shock.

The results of the impulse response analysis demonstrate that a significant shock to the financial sector causes an immediate and persistent negative effect on GDP growth (in Figure 3). The effect on the general economy is more direct and evident, indicating that the expansion of the financial sector might divert resources away from productive investments, potentially hampering the development of key sectors like manufacturing and real economic activities.

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In contrast, the impulse response analysis for wages showcases more nuanced dynamics. The effect of the growing financial sector on wages fluctuates over time. This suggests that the relationship between financialization and wages is complex and subject to varying influences. It is likely that the impact on wages is influenced by factors such as changes in labor market conditions, government policies, and shifts in household financial behavior.

4. Conclusion

The empirical modeling conducted in this study provides concrete evidence of financialization occurring at the macroeconomic level. It supports the theories put forth in previous studies, which suggest that as economies progress through stages of industrialization, the exchange and accumulation of financial value begin to surpass the value generated by real production. This phenomenon leads to a shift in favor of the financial sector. Originally intended to aid and support real production, the financial sector now assumes a significant role in value generation, yet it does not contribute tangible value to society. As a result, it exerts a crowding-out effect on the overall production of goods and services. This concern aligns with the views of post-Keynesian economists who worry about the fundamental contradiction within Capitalism – the pursuit of profit-driven financial activities undermines the real economy. The process of financialization, observed in many Western countries, has been associated with several financial crises, underscoring the potential risks and pitfalls of an overreliance on the financial sector. In the Marxist theory of finance, the financial dominance of Western powers enables them to seek more profitable real production opportunities through global corporations, while exporting risk through measures like quantitative easing and the selling of debts abroad. However, for countries like China, which are post-colonial and still undergoing industrialization, over-financialization poses a different set of challenges. It can lead to premature "de-industrialization," trapping these nations in their current stage of development while exposing their economies to the dangers associated with financial risks. At the household level, the relationship between financialization and wages is more complex, requiring analysis of microeconomic data. The study's current findings, while not establishing a clear causality, do reveal that wages can be significantly influenced by various financial developments. Despite notable productivity growth in China, wage growth has been relatively sluggish, suggesting the influence of financial forces on income dynamics. As financial output dominates the economy, quantitative easing is often employed to enhance credibility, inflate asset prices, and stimulate growth, even amid a slowdown in the real economy [11]. However, this strategy can lead to high inflation, which, while mitigated by correlated asset value growth for some, trades off with labor's competitiveness. Consequently, the wealth of wage-dependent individuals, particularly those without significant assets like homeownership in the context of Chinese workers, could dramatically decline, exacerbating inequality. The interplay between financialization and the real economy at both macro and micro levels necessitates careful consideration and policy attention. As the financial sector gains prominence, finding the right balance between its role in supporting real economic activities and preventing potential crowding-out effects becomes crucial. Policymakers must be wary of the potential consequences of over-financialization, especially in countries striving for industrialization, and take measures to foster sustainable and equitable economic growth.

This study has encountered significant challenges related to the lack of data at the household level, both in terms of the variables included in the variances and the duration of the time series. Exploring the macroeconomic changes at a more detailed socio-economic level necessitates comprehensive data on households' financialization patterns. Unfortunately, due to constrained capacity, the study was unable to collect its own data that would be most suitable for investigating the research topics. Looking ahead, expanding the database for research purposes would be immensely beneficial in studying the financialization of individuals in China. Access to more extensive household-level data

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would open up exciting avenues for investigating various aspects of financialization's impact. For instance, researchers could delve into the labor market dynamics of individuals who work to pay mortgages, analyze consumption patterns when household wealth is financialized, and examine the implications of the increasing interdependence between the interests of the working class and the capitalist class. Moreover, expanding research on household financialization could shed light on the broader social implications of the evolving economic landscape. Sociological aspects, such as the changing dynamics within the working class as their interests become increasingly connected with those of the capitalist class, present captivating subjects for investigation. These topics represent a vast array of possibilities, each offering unique insights into the intricate relationship between financialization and individual households in China. Further research in this direction would yield valuable knowledge on how financialization affects not only the macroeconomy but also the lives of ordinary citizens. By gaining a comprehensive understanding of the various dimensions of financialization at the household level, policymakers and scholars can formulate more targeted strategies to address potential challenges and capitalize on opportunities for fostering inclusive and sustainable economic growth.

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