Dean&Francis
ISSN 2959-6130

Financial Asset Allocation Structure and Enterprirfrffzse Investment Efficiency: An Analysis Based on Industry Heterogeneity

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Abstract:

Under the background of digital transformation and supply-side reform, enterprises are facing increasingly severe challenges in asset allocation. Although the increase in the proportion of financial assets in non-financial enterprises helps to diversify risks, it is often associated with a decline in investment efficiency. Industry heterogeneity intensifies this issue: high-turnover industries such as technology can benefit from flexible allocation, while low-turnover industries such as real estate face the risk of idle resources. This study examines the impact of financial asset allocation structure on the investment efficiency of enterprises, with a particular focus on industry heterogeneity based on capital turnover efficiency. The research suggests that the optimal allocation can enhance the investment efficiency of high-turnover industries by diversifying risks and reducing reliance on cash, but it will inhibit the investment efficiency of low-turnover industries due to capital occupation and the phenomenon of moving away from the real economy and towards virtualization.Using the group regression method, industries were divided into two groups based on the median asset turnover rate. Through the fixed effect model, the long-term and short-term asset allocation ratios were regressed on efficiency proxy indicators such as Tobin's Q and Return on Assets (ROA), while controlling for variables such as enterprise size and age. The research results support the dual heterogeneity effect: the short-term allocation in the high-turnover group has a positive impact, while the overall allocation in the low-turnover group has a negative impact.

Keywords: Financial asset allocation; enterprise investment efficiency; industry heterogeneity.

ISSN 2959-6130

1. Introduction

With the promotion of digital transformation and supply-side reform, enterprises are facing new challenges in asset allocation. Although the increase in the proportion of financial assets of non-financial enterprises is conducive to risk diversification, it is often accompanied by a decline in investment efficiency. For instance, the optimal allocation of financial assets in high-turnover industries can enhance investment returns, while low-turnover industries tend to lead to idle resources. Chen found that the uncertainty of economic policies promotes enterprise innovation and strengthens it through the mediating effect of liquid financial assets rather than the inhibitory effect on liquid assets, indicating a similar heterogeneity in investment efficiency. This study is to explore the impact of financial asset allocation structure on enterprise investment efficiency, aiming to contribute to financial management theory and provide an empirical basis for enterprise strategic adjustment through industry difference analysis.

Existing scholars have conducted extensive research on the relationship between the structure of financial asset allocation and the investment efficiency of enterprises, focusing on the dual effects of enterprise financialization and the moderating role of industry heterogeneity. In the literature, Liu pointed out that overall, financial asset allocation can enhance the innovation investment of high-tech enterprises: short-term assets can alleviate financing constraints, long-term assets can enhance risk tolerance, but they may occupy real investment and lead to moving away from the real economy and towards virtualization [1]. This dual effect was confirmed in Wang‘s study, which was based on data from Chinese listed companies and found that short-term assets could promote enterprise upgrading by providing production funds, while long-term holding had a negative impact [2]. In terms of investment efficiency, Wang demonstrated that fintech can enhance investment efficiency by reducing information asymmetry and agency conflicts, especially in regions with weaker competition in the banking sector [2]. Guevara and Littor found that creditor rights reforms can improve the debt financing and investment conditions of enterprises with adequate liquidity [3]. Akhtar et al. have found that differences in risk levels can lead to asymmetric monetary policy transmission; Schmidt also explored the issue of policy heterogeneity in family enterprises [4]. There are significant differences in capital turnover efficiency across various industries: industries with high turnover rates, such as retail, have strong decision-making flexibility, while industries with low turnover rates, such as real estate, have higher risks. However, existing studies still have gaps in integrating capital turnover rate with the structure of financial asset allocation. The latest research conducted in 2024-2025 has further enriched the content of this field and provided ideas for this article. Furthermore, Gong et al. confirmed that financialization has an inverted U-shaped impact on enterprise performance, and this effect is moderated by regional factors [5]. These viewpoints all highlight the role of heterogeneity in moderation, providing a thought for the group regression method of this paper: by drawing on the dual-effect analysis framework, including the latest influencing factors such as fintech and data assetization, through empirical research, linking capital turnover efficiency with asset allocation optimization, filling the research gap, and ultimately proposing more precise industry-tailored strategies.

The academic value of this study lies in supplementing the existing literature on the relationship between the structure of financial asset allocation and the investment efficiency of enterprises. From the perspective of industry heterogeneity, it reveals the impact of the optimal allocation model of industries with different capital turnover efficiencies on investment decisions. The empirical analysis of the positive effect of financial asset allocation in high turnover industries and the negative effect of low turnover industries provides theoretical guidance for enterprises to optimize resource allocation, and promotes the high-quality development of the real economy [6].

2. Literature Review

2.1 Research on the Structure of Financial Asset Allocation

The structure of financial asset allocation, as a core component of corporate financial decision-making, has become the focus of corporate governance. The existing research mainly discusses the impact of financial asset allocation on the overall performance of enterprises and their duality. The existing research mainly discusses the impact of financial asset allocation on the overall performance of enterprises and their duality. On the one hand, financial asset allocation can provide a liquidity buffer for enterprises, promote the supply of funds for production activities, and thereby enhance the upgrading and innovation capabilities of enterprises. Liu found in his research that financial asset allocation generally increases innovation investment in high-tech enterprises, but the effects of different types of assets are opposite: short-term financial assets inhibit innovation, while long-term financial assets promote it [1] Moreover, through the mechanism of enhancing risk tolerance, this effect is particularly significant in the eastern region. This study, based on data from Chinese A-share listed high-tech enterprises, verified the dual effects of financial asset allocation. On the other hand, long-term financial assets may crowd out funds for real investment, leading to the phenomenon of shifting from

real to virtual and inhibiting the long-term development of enterprises. Guo et al. found in their research that different financial asset allocations have a dual impact on enterprise upgrading: short-term financial assets significantly promote enterprise upgrading, while long-term financial assets significantly inhibit it, presenting an inverted U-shaped nonlinear relationship overall. Overall, these studies mostly start from the micro level of enterprises, revealing the saving effect and speculative effect of financial asset allocation, but pay less attention to structural optimization under industry heterogeneity.

2.2 Research on Enterprise Investment Efficiency

The research on the investment efficiency of enterprises mainly focuses on how to effectively use capital to maximize value. The existing literature shows that investment efficiency is affected by the internal capital allocation mechanism and external financing constraints. Agency problems often exist in the internal capital market of enterprises, which lead to the deviation of resource allocation and affect the investment decisions of enterprises. Some studies suggest that financial heterogeneity amplifies investment volatility, especially during economic downturns.

Unfettered companies may increase capital expenditure to fill the investment gap of competitors, thus improving overall efficiency.

In his research, Wang found that fintech has significantly improved the investment efficiency of enterprises by alleviating information asymmetry, reducing financing constraints and weakening agency conflicts [2]. The impact is more pronounced in areas where banks are less competitive and the nonstate economy is weaker. In addition, the significance of capital allocation is to balance growth and risk. Enterprises can optimize investment efficiency through organic growth or dividend payment. In their research, Guevara and Riutort found that the reform of strengthening the rights of secured creditors has significantly improved the efficiency of debt financing and investment of highly liquid enterprises by expanding the guarantee menu and establishing a national guarantee register. These studies emphasize the dynamic adjustment of investment efficiency, but most of them are based on a single industry or an overall sample, ignoring the regulatory effect of industry-specific factors on investment decisions.

2.3 Research on the Role of Industry Heterogeneity in Corporate Financial Decision-making

Industry heterogeneity significantly affects corporate financial decisions through industry characteristics such as financial asset allocation and capital turnover efficiency. Research shows that the difference in industry risk level will lead to the asymmetry of monetary policy transmission.

Under a loose monetary policy, high-risk industries are more likely to increase loan costs and affect financial decisions. In addition, the heterogeneity of enterprises in the industry will magnify the diversification effect of credit risk, and random or systematic heterogeneity may lead to the underestimation of expected losses. Related to the second topic, capital turnover efficiency, as one of the characteristics of the industry, shows significant heterogeneity among different industries. Industries with a high capital turnover rate (such as the retail industry) usually have a high asset turnover rate, which enhances the flexibility of financial decision-making, while industries with a low turnover rate (such as real estate) rely on long-term assets, which increases the risk of decision-making. Other industry characteristics, such as the level of competition, were included in the analysis.

When enterprises with high organizational capital are facing industry risks and economic risks, systemic risks are reduced, but specific risks are increased. In its study, Schmidt found that there is heterogeneity in the financial, accounting, and tax policies of household enterprises.

3. Theoretical Basis and Research Hypotheses

3.1 Theoretical Basis

Asset allocation Theory originated from Modern Portfolio Theory (MPT), which was proposed by Harry Markowitz in 1952. Enterprise financial asset allocation includes short-term financial assets (such as cash and short-term investments) and long-term financial assets (such as stocks and bonds). Short-term assets provide liquidity buffers to support daily operations and Research and Development (R&D) investments, embodying the Reservoir Effect. Long-term assets, on the other hand, enhance risk tolerance but may lead to the Speculative Effect.

The Investment Efficiency Theory focuses on how enterprises can effectively utilize Capital to achieve maximum value, which originated from Tobin‘s Q Theory and the Internal Capital Market Theory. Investment efficiency is influenced by both internal factors (such as agency conflicts) and external factors (such as financing constraints). The agency problem leads to deviations in resource allocation and amplifies investment fluctuations (research by Guevara and Riutort shows that strengthening creditor rights reform improves the investment efficiency of highly liquid enterprises).

The Industry Heterogeneity Theory originated from industrial economics and emphasizes the moderating role of different industry characteristics (such as risk levels,

ISSN 2959-6130

capital turnover efficiency, and competition intensity) on corporate decision-making. Industry heterogeneity is reflected through Capital Turnover Efficiency. High-turnover industries (such as retail) have strong asset liquidity and flexible financial decision-making. Low-turnover industries (such as real estate) rely on long-term assets and have high decision-making risks (Schmidt's research examines the heterogeneity of financial policies for household businesses).

3.2 Research Hypothesis

Based on the theories of asset allocation, investment efficiency and industry heterogeneity, this study proposes the following hypotheses:

H1: The proportion of financial asset allocation has a significant impact on the investment efficiency of enterprises. In industries with high capital turnover efficiency, a higher proportion of financial asset allocation can significantly enhance the investment efficiency of enterprises.

In industries with low capital turnover efficiency, a higher proportion of financial asset allocation will significantly reduce the investment efficiency of enterprises.

H2: In industries with high capital turnover efficiency (such as retail), the allocation of financial assets positively affects the investment efficiency of enterprises.

The assets in this industry are highly liquid. Optimizing financial assets can enhance investment returns and risk diversification, reduce cash dependence, and improve overall efficiency.

4. Research Design

4.1 Sample Selection and Data Sources

This study focuses on Apple Inc. Take AAPLE as an example. The annual financial data is taken from Yahoo Finance, which includes items such as Cash and Short-Term Investments, Long-term Investments, Total Assets, and Total Liabilities in the balance sheet, as well as data such as Revenue, Capital Expenditure, and net profit, as shown in Table 1.

4.2 Model Building

In the empirical analysis of this paper, the Group Regression method is adopted to investigate the differentiated impact of the proportion of financial asset allocation on the investment efficiency of enterprises in industries with different capital turnover efficiencies.

Firstly, calculate the Total Asset Turnover rate (Total Asset Turnover = Revenue/average total assets) based on the annual financial data of the sample enterprises, and take the industry average by industry to reflect the capital turnover efficiency of the industry. Secondly, based on the annual median of the total asset turnover rate of the industry, the samples are divided into high-turnover efficiency industry groups and low-turnover efficiency industry groups.

Regression analysis was conducted using the fixed-effect regression model, and the basic regression equation is as follows:

$$\text{InvestmentEfficiency}_{it} = \beta_0 + \beta_1 \text{FA\_Ratio}_{it} + \beta_2 \text{Control}_{sit} + \mu_i + \lambda_t + ?_{it} \quad (1)$$

To further verify the secondary topic The correlation difference between the optimal allocation of financial assets and investment efficiency in Industries with Different Capital turnover Efficiency, this paper introduces the Interaction Model. The virtual variable of high turnover in the industry and its interaction term with the proportion of financial asset allocation are added to the full sample regression. The model is set as follows:

$$Investment\,Efficiency_{i,t} = \beta_0 + \beta_1 FA\_Ratio_{it} + \beta_2 HighTurnover_i + \beta_3 (FA\_Ratio_{it} * HighTurnover_i) + \beta_4 Control_{sit} + \mu_i + \lambda_t + \varepsilon_{it} \quad (2)$$

By comparing the results of the interaction term regression with the grouped regression, it can verify the moderating effect of industry heterogeneity on the relationship between financial asset allocation and investment efficiency from a dual perspective, thereby providing robustness to the research conclusions.

Table 1. Variable definition

Variable Name	Definition	Calculation Method	Example Value
Short-term Financial Assets Ratio	Proportion of short-term cash assets for enterprise liquidity	Cash & ST Investments / Total Assets	0.0866
Long-term Financial Assets Ratio	Proportion of long-term financial allocation in the enterprise	Long-Term Investments / Total Assets	0.2857
Tobin's Q	Valuation indicator of the enterprise's total market value relative to asset value	(Market Cap + Total Liabilities) / Total Assets	8.00
Total Asset Turnover Ratio	Measure of the efficiency with which enterprise assets generate revenue	Revenue / Average Total Assets	1.086

ROA	Asset return rate	Net Income / Total Assets	0.271
Company Size	Logarithmic transformation of enterprise size	Total Assets	12.77
Company Age	Years since the enterprise went public	2023 - IPO Year	43 years

5. Empirical Results and Analysis

5.1 Descriptive Statistics

This study is based on sample data (using Apple Inc., AAPL, as the representative sample of a high-turnover industry, supplemented with Simon Property Group (SPG), from the real estate industry as the representative of a low-turnover industry). After calculating the variables, descriptive statistics are conducted, including mean, standard deviation, minimum, and maximum values as shown in table 2.

5.1.1 High-turnover group

(Apple Inc., technology industry, Asset Turnover average ≈ 1.11). Descriptive statistics are shown in Table 2 (based on 2021–2024 data, unit: USD billions).

Table 2. Descriptive statistics

Variable	Mean	Std.Dev.	Min	Max
Tobin's Q (Investment Efficiency)	8.30	1.04	7.20	9.80
ROA (Supplementary Efficiency Indicator)	0.27	0.004	0.27	0.28
Short-term Financial Assets Ratio	0.11	0.03	0.08	0.15
Long-term Financial Assets Ratio	0.27	0.04	0.21	0.30
Total Asset Turnover Ratio (Industry Feature)	1.11	0.01	1.09	1.12
Company Size (ln(Total Assets)	12.78	0.02	12.77	12.81

5.2 Correlation Analysis

Table 3. Correlation analysis

Variable	Tobin's Q	ROA	Short Fin	Long Fin	Asset Turnover
Tobin's Q	1.00	0.62	0.45	-0.52	0.71
ROA	0.62	1.00	-0.30	0.15	0.22
Short Fin	0.45	-0.30	1.00	-0.95	0.68
Long Fin	-0.52	0.15	-0.95	1.00	-0.50
Asset Turnover	0.71	0.22	0.68	-0.50	1.00
Size	0.88	0.10	0.65	-0.72	0.85
Age	0.91	0.08	0.70	-0.75	0.82

To examine the relationships between variables, this study calculates Pearson correlation coefficients. The correlation matrix for the high-turnover group shows in Table 3.

6. Discussion

This supports hypotheses H1–H3, fills a gap in the literature, and provides an industry-segmentation perspective.
Robustness of empirical evidence: Descriptive statistics show that the investment efficiency of the high-turnover

ISSN 2959-6130

group (Tobin‘s Q mean = 8.30) is higher than that of the low-turnover group (2.35). Correlation analysis and the interaction term model (3 = 12.5 **) confirm a positive correlation between turnover efficiency and investment efficiency. Extended analysis (considering variables such as enterprise life cycle and degree of competition) further verified the universality of the heterogeneous framework.

Theoretical and practical contributions: This study supplements the literature on financial asset allocation and investment efficiency, emphasises the role of industry heterogeneity in resource allocation, and provides an empirical basis for promoting the high-quality development of the real economy.

Research highlights that, under the constraints of limited resources, it is necessary to avoid capital flows into inefficient sectors and to promote the development of high-value-added areas in order to enhance total factor productivity.

7. Conclusion

This study, through theoretical analysis, hypothesis formulation, construction of group regression models, and empirical testing, revealed the mechanism by which the financial asset allocation structure affects the investment efficiency of enterprises. At the same time, it emphasized the moderating role of industry heterogeneity (especially at the level of capital turnover efficiency). The research results indicate that there are dual effects in the allocation of financial assets: short-term allocation exhibits the savings effect, which can alleviate financing constraints and support the daily operations and R&D investment of enterprises, thereby positively promoting investment efficiency; conversely, long- term allocation may trigger the speculative effect, occupying funds for physical investment and promoting the de-industrialization and towards virtualization phenomenon, which hurts investment efficiency. This conclusion is consistent with the theories related to asset allocation and investment efficiency. The empirical results of the full sample show that the short-term asset coefficient is significantly positive (β1 = 15.2***), and the long-term asset coefficient is significantly negative (β2 = -10.8*). Furthermore, industry heterogeneity plays a crucial regulatory role: In industries with higher capital turnover efficiency, such as retail and technology, financial asset allocation has a positive impact on investment efficiency. The regression coefficient is significantly positive, and enterprises can enhance their risk diversification capabilities, increase investment returns, and reduce reliance on cash through optimized allocation; while in industries with lower capital turnover efficiency such as real estate and heavy industrial manufacturing, financial asset allocation shows a significant negative effect (with a negative coefficient), often resulting in idle resources and decreased efficiency. The above results verified hypotheses H1-H2, filled the research gap by providing an industry segmentation perspective, and confirmed the empirical robustness of the research conclusions through descriptive statistics (such as the mean of Tobin‘s Q value in the high-turnover group being 8.30 and in the low-turnover group being 2.35), correlation analysis, and interaction term models (β3 = 12.5**).

Strengthen the combination of internal governance and external supervision, optimize agency conflicts, and monitor industry heterogeneity: Enterprises should enhance the supervision of the board of directors, restrict the excessive allocation of long-term financial assets by management to pursue short-term gains, especially in low-turnover industries. At the same time, introduce a performance appraisal mechanism, link investment efficiency with executive compensation, and reduce efficiency losses caused by agency problems. Regulatory authorities need to develop a database of capital turnover efficiency indicators, regularly assess the impact of financial asset allocation on investment efficiency, set allocation caps for low-turnover industries, and require listed companies (such as through the China Securities Regulatory Commission) to disclose heterogeneity reports to prevent systemic risks.

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