The Impact of Fintech Levels on the Performance of Listed Companies

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Abstract. In today's era of digital age, fintech plays a crucial role in driving innovation and efficiency across various industries. This study explores the impact of fintech levels on the performance of listed companies, focusing on its role in enhancing profitability, operational efficiency, and risk management. Using a text mining approach, a Fintech Development Index is constructed based on data from the CSMAR database (2001–2023). The findings reveal that higher levels of fintech adoption significantly enhance financial performance by alleviating information asymmetry, optimizing resource allocation, and mitigating financial risks. Regression analysis shows that fintech adoption positively impacts net profit, with the effect being stronger in non-state-owned enterprises due to their greater flexibility and faster decision-making. Additionally, the influence of fintech is found to vary across firms based on governance structures, ownership concentration, and the percentage of female executives, highlighting the nuanced pathways through which fintech drives corporate performance.

Keywords: Fintech Adoption, Corporate Performance, Investment Efficiency, Capital Structure, Corporate Governance, State-Owned Enterprises (SOEs), Panel Regression.

1. Introduction

The rapid rise of financial technology (fintech) has fundamentally transformed the traditional landscape of financial services. Fintech leverages cutting-edge technologies such as big data, artificial intelligence, blockchain, and cloud computing to disrupt conventional practices and create innovative solutions [1]. From platform-based lending and automated trading to digital payment systems and robo-advisory services [2], fintech has reshaped how financial institutions and corporations operate. For listed companies, these innovations promise significant benefits, including enhanced decision-making, improved resource allocation, reduced costs, and mitigated operational risks. For instance, platform-based lending systems enable companies to access funding more efficiently, while automated trading systems enhance market responsiveness and expand market competitiveness by alleviating financing constraints and enabling greater investment in R&D [3].

However, the impact of fintech adoption on the financial and operational performance of listed companies remains underexplored, particularly in terms of profitability, market competitiveness, and long-term sustainability. Studies show that fintech contributes to economic growth and enhances financial inclusion, accelerating digital transformation across industries [4]. Yet, its role in improving corporate financial performance remains unclear, particularly in areas such as profitability, investment efficiency, and governance [5].

Listed companies, as key drivers of economic growth and innovation, face persistent challenges, including information asymmetry, resource misallocation, and vulnerability to market volatility. Fintech, with its ability to enhance transparency, optimize resource distribution, and mitigate risks, provides a promising solution to these issues [6]. However, the relationship between fintech adoption and corporate performance is complex and varies across industries, firm sizes, and regional contexts [7]. Recent research on Chinese A-share listed companies suggests that fintech improves corporate investment efficiency by reducing financing constraints, mitigating agency conflicts, and curbing over-investment, highlighting its potential to enhance governance and economic development [8].

Beyond financial benefits, fintech adoption enhances corporate competitiveness by improving R&D investment and expanding market share [9]. Studies also highlight that fintech strengthens

corporate governance by reducing earnings management, improving financial transparency, and increasing investor confidence [10]. Moreover, fintech fosters technological innovation efficiency, allowing firms to invest more in R&D and digital transformation, thus improving long-term competitiveness [11]. These findings suggest that fintech adoption not only enhances financial decision-making but also plays a key role in corporate strategy and governance dynamics.

Despite the growing body of literature on fintech's benefits, most existing research has primarily focused on its impact within financial institutions, particularly banks and insurance firms. There remains a gap in understanding how fintech adoption influences non-financial firms, particularly listed companies. To address this gap, this study examines the effect of fintech adoption on the financial performance of listed firms in China. Using a Fintech Development Index constructed through text-mining techniques, this research applies panel regression models to analyze a broad dataset of firms across different ownership structures.

This study contributes to the literature in three key ways. First, it provides empirical evidence on the role of fintech in improving corporate performance, extending the scope of analysis beyond traditional financial institutions. Second, it identifies specific mechanisms—such as platform-based services, automated processes, and digital integration—through which fintech impacts firm-level outcomes. Third, it offers practical recommendations for corporate managers and policymakers on leveraging fintech for sustainable growth and competitive advantage.

The structure of this paper is as follows. Section 2 reviews the relevant literature, providing a theoretical basis for understanding the relationship between fintech adoption and corporate performance. Section 3 outlines the data and methodology, detailing the construction of the Fintech Development Index and the regression models used in the analysis. Section 4 presents the empirical results, including baseline findings, robustness checks, and an exploration of heterogeneity effects across ownership structures and governance characteristics. Section 5 interprets the findings, emphasizing the mechanisms through which fintech impacts corporate performance and discussing their broader implications. Finally, Section 6 summarizes the key findings, highlights the study's contributions, and offers recommendations for future research and policy initiatives.

2. Data

Table 1 presents the variable definitions used in this study. The data is sourced from the CSMAR database, covering the period from 2001 to 2023. It includes information on net profit as the dependent variable, fintech adoption as the independent variable, and various control variables related to firm characteristics, ownership structure, and corporate governance.

Table 1. Variable Definition

Variable Type	Variable	Variable Symbol	Variable Definition
Dependent Variable	Net Profit	NetProfit	Total net profit, a direct indicator of company performance
Independent Variable	Fintech Level	Fintech	Level of fintech adoption and implementation
Control Variables	Total Assets	TotalAssets	Log-transformed total assets, as a proxy for company size
	Institutional Ownership	INST	Proportion of shares held by institutional investors
	Ownership Concentration (Top 1 Shareholder)	TOP1	Proportion of shares held by the largest shareholder
	Ownership Concentration (Top 3 Shareholders)	TOP3	Proportion of shares held by the top three shareholders
	Ownership Concentration (Top 5 Shareholders)	TOP5	Proportion of shares held by the top five shareholders
	Managerial Ownership	Mshare	Proportion of shares held by managers, indicating alignment with shareholder interests.
	Board Size	Board	Board size, reflecting governance structures
	Proportion of Independent Directors	Indep	Percentage of independent directors
	Financial Expertise of Executives	FinBack	Indicator of whether executives possess financial expertise

3. Method

The data used in this study spans the period from 2001 to 2023 and includes listed companies in China. The fintech level indicator is constructed using text-mining techniques to analyze the frequency of fintech-related keywords from the annual reports of these firms. Financial and operational data, including net profit and other firm-specific variables, are sourced from the authoritative database CSMAR.

This paper adopts the following regression model to analyze the relationship between fintech levels and company performance:

$$Yit=\alpha+\beta1Fintechit+\beta2Controlsit+\delta i+\theta t+\varepsilon it \quad (1)$$

In this model, Yit represents the dependent variable, net profit, which is used as a direct measure of company performance for firm i in year t. The core explanatory variable, Fintechit, denotes the fintech level of firm i in year t, measured using a fintech development index derived from the frequency of fintech-related keywords extracted from the firms' annual reports. The control variables, Controlsit, encompass firm-specific characteristics such as total assets, ownership concentration, institutional ownership, managerial ownership, and governance factors like board size and the proportion of independent directors. Additionally, macroeconomic conditions, industry characteristics, and time effects are accounted for through industry and time fixed effects. To address unobservable heterogeneity, δi and θt represent firm fixed effects and time fixed effects, respectively, while εit serves as the random error term.

4. Regression Analysis

4.1. Descriptive Statistics

Table 2 presents the descriptive statistics for the key variables used in this study. It includes the number of observations, mean values, standard deviations, and the minimum and maximum values for each variable. The dataset, sourced from the CSMAR database, covers 49,419 firm-year observations.

Table 2. Descriptive Statistics.

Variable	Obs	Mean	Std. dev.	Min	Max
fintech	49,419	2.94	1.49	0.00	7.55
NetProfit	49,419	9.54×10^8	8.84E×10^9	-6.87×10^10	3.61×10^11
TotalAssets	49,419	5.93×10^10	8.07×10^11	3083701.00	3.96×10^13
INST	49,356	47.79	25.40	0.00	463.50
TOP1	49,419	34.95	15.41	0.29	89.99
TOP3	49,419	49.41	15.80	0.56	98.29
TOP5	49,419	54.03	15.67	0.81	99.23
Mshare	47,794	12.30	19.40	0.00	89.99
Board	49,400	2.14	0.22	0.00	3.04
Indep	49,400	37.14	5.67	0.00	80.00
FinBack	49,419	0.55	0.50	0.00	1.00

4.2. Correlation

The table 3 provides insights into how fintech adoption relates to corporate performance, ownership structure, and governance. Below are the key findings:

Table 3. Correlation

	finte ch	NetPr o~t	Total A~s	INST	TOP 1	TOP 3	TOP 5	Msha re	Boar d	Inde p	FinBa ck
fintech	1.000 0										
NetProfi t	0.067 4	1.000 0									
TotalAs sets	0.070 2	0.920 6	1.0000								
INST	- 0.184 4	0.134 4	0.0996	1.000 0							
TOP1	- 0.152 1	0.066 2	0.0285	0.482 6	1.000 0						
TOP3	- 0.073 5	0.130 3	0.0938	0.517 7	0.805 7	1.000 0					
TOP5	- 0.024	0.128 9	0.0953	0.492 6	0.714 6	0.973 1	1.000 0				
Mshare	0.237	- 0.053 7	- 0.0434	- 0.625 9	- 0.089 5	0.073 8	0.152 8	1.000 0			

Board	-0.1349	0.1394	0.1341	0.2563	0.0159	0.0238	0.0217	-0.2228	1.0000		
Indep	0.1264	0.0219	0.0098	-0.0982	0.0067	0.016	0.0174	0.1009	-0.4529	1.0000	
FinBack	0.0686	0.0487	0.0407	0.0129	-0.0489	-0.0166	-0.0013	0.0038	0.0438	0.0529	1.0000

4.2.1 Fintech and Corporate Performance

Fintech adoption has a weak positive correlation with net profit (0.0674). This suggests that companies using more fintech tend to be slightly more profitable. However, the impact is not strong. Fintech also has a weak positive correlation with total assets (0.0702). This means that larger firms are more likely to adopt fintech, possibly because they have more resources to invest in technology.

4.2.2 Ownership Structure and Corporate Performance

Institutional ownership (INST) has a positive correlation with net profit (0.1344). This suggests that firms with more institutional investors tend to be more profitable. Large shareholders also seem to influence performance. The correlation between the top three shareholders (TOP3) and net profit is 0.1303, which is stronger than the effect of a single major shareholder (TOP1 = 0.0662). This indicates that firms with more concentrated ownership may benefit from better decision-making.

4.2.3 Fintech and Ownership Structure

The correlation between fintech and institutional ownership (-0.1844) is negative. This suggests that firms with more institutional investors tend to adopt fintech at a lower rate. Similarly, firms with high ownership concentration (TOP1, TOP3, TOP5) show weak negative correlations with fintech. This means that companies controlled by a few major shareholders may be slower to adopt new technologies.

4.2.4 Governance and Corporate Performance

Board size has a positive correlation with net profit (0.1394). This suggests that firms with larger boards may perform better. Independent directors (Indep) have almost no correlation with net profit (0.0219). This means their presence does not strongly impact financial performance. However, fintech adoption is positively correlated with independent directors (0.1264). This suggests that firms with more independent oversight may be more open to using fintech.

4.2.5 Managerial Ownership and Fintech

Managerial ownership (Mshare) has a positive correlation with fintech (0.237). This is one of the strongest relationships in the table. It suggests that when managers own more shares, they are more likely to invest in fintech. However, managerial ownership has a weak negative correlation with net profit (-0.0537). This means higher ownership by managers does not necessarily lead to better performance.

4.3. Regression

The table 4 regression analysis shows that fintech adoption has a clear positive impact on net profit, with each unit increase in fintech associated with a 0.134 rise in profitability. Institutional ownership also boosts profits, indicating that companies with more oversight from institutional investors tend to perform better. Market concentration has mixed effects: higher concentration among the top one and top five shareholders (TOP1 and TOP5) increases profitability, while broader concentration among the top three shareholders (TOP3) negatively affects it, possibly due to conflicts or inefficiencies. Market share positively influences net profit, highlighting the benefits of market dominance.

Governance factors are also important—larger boards and financial expertise among board members significantly improve profitability, while independent directors have a smaller but positive impact.

Table 4. Regression

	NetProfit
fintech	.134***
	(.007)
INST	.02***
	(.001)
TOP1	.008***
	(.001)
TOP3	-.028***
	(.003)
TOP5	.022***
	(.002)
Mshare	.011***
	(.001)
Board	.242***
	(.039)
Indep	.002*
	(.001)
FinBack	.059***
	(.013)
_cons	16.586***
	(.113)
Observations	41808
R-squared	.762

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

4.4. Panel Regression

This section presents panel regression results examining the impact of fintech adoption on corporate performance. Table 5 investigates how this relationship differs between state-owned enterprises (SOEs) and non-SOEs, considering governance and ownership structure. Table 6 explores the effect of female executive representation on the fintech-profitability link. The dataset is divided into two groups based on female representation, allowing for a comparison of fintech's impact in firms with high and low female leadership. These regressions help identify the mechanisms through which fintech adoption influences firm performance across different corporate structures.

Table 5. Panel Regression Results for State-Owned Enterprises (SOEs) and Non-SOEs.

	(1) NetProfit	(2) NetProfit
fintech	.114***	.127***
	(.011)	(.009)
INST	.021***	.02***
	(.001)	(.001)
TOP1	.009***	.005***
	(.002)	(.002)
TOP3	-.029***	-.022***
	(.005)	(.004)
TOP5	.023***	.019***
	(.005)	(.003)
Mshare	.018***	.011***
	(.007)	(.001)
Board	.036	.432***
	(.057)	(.06)
Indep	0	.006***
	(.002)	(.002)
FinBack	.135***	.011
	(.023)	(.017)
_cons	17.179***	15.932***
	(.165)	(.176)
Observations	15716	22659
R-squared	.799	.725

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

This analysis compares the impact of fintech on net profit for state-owned enterprises (SOEs) and non-state-owned enterprises (non-SOEs). The coefficient for fintech in model (1) for SOEs is 0.114, while in model (2) for non-SOEs, it is 0.127, indicating that fintech adoption has a stronger positive effect on profitability in non-SOEs. This suggests that non-SOEs may benefit more from fintech innovations, possibly due to greater flexibility, faster decision-making, and more robust incentives to leverage technological advancements compared to the often-bureaucratic structures of SOEs.

Table 6. Panel Regression Results for Female Executive Representation

	(1) NetProfit	(2) NetProfit
fintech	.141***	.1***
	(.009)	(.011)
INST	.019***	.019***
	(.001)	(.001)
TOP1	.011***	.004**
	(.001)	(.002)
TOP3	-.031***	-.024***
	(.004)	(.004)
TOP5	.026***	.018***
	(.003)	(.004)
Mshare	.009***	.011***
	(.001)	(.001)
Board	.207***	.279***
	(.05)	(.07)
Indep	0	.006***
	(.002)	(.002)
FinBack	.083***	.026
	(.019)	(.02)
_cons	16.723***	16.575***
	(.144)	(.202)
Observations	22643	18407
R-squared	.801	.762

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

The regression analysis examines the impact of the percentage of female executives on the relationship between fintech adoption and net profit. The dataset is divided into two groups based on the mean percentage of female executives (18.47%): firms with female executive representation less than or equal to the mean (List 1) and those with representation above the mean (List 2). The results reveal that fintech adoption has a stronger positive impact on profitability in firms with lower female representation, as evidenced by a higher coefficient for fintech in List 1 (0.141) compared to List 2 (0.1). This suggests that firms with fewer female executives may rely more heavily on technological advancements to enhance performance, whereas those with higher female representation might derive benefits from other factors, such as leadership diversity and improved governance practices.

5. Conclusion

This study examines the impact of fintech adoption on the performance of listed companies in China, providing new insights into the relationship between technological innovation and corporate outcomes. The findings reveal that fintech adoption significantly enhances corporate profitability by alleviating information asymmetry, optimizing resource allocation, and mitigating financial risks. The effect is particularly pronounced in non-state-owned enterprises, which benefit from greater flexibility and quicker decision-making compared to state-owned enterprises. Additionally, the influence of fintech varies across governance structures and executive characteristics, with larger boards and financial expertise among executives amplifying its benefits. Interestingly, firms with lower female executive representation appear to rely more on fintech for performance improvements, while those with higher female representation may benefit from alternative governance advantages.

By employing a Fintech Development Index constructed through a text-mining approach, this research offers a novel framework for measuring fintech levels. Robust regression analyses confirm the consistent positive impact of fintech on corporate performance, while heterogeneity analyses highlight the nuanced pathways through which these effects materialize. These findings not only contribute to the existing literature on fintech but also provide practical implications for corporate managers and policymakers aiming to leverage fintech for sustainable growth and competitiveness.

Future research could further explore the dynamic relationship between fintech and corporate performance across different industries and global contexts, as well as investigate the long-term impacts of fintech adoption on firm innovation and resilience. As fintech continues to evolve, its potential to transform corporate operations and drive economic development warrants ongoing scholarly attention.

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