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# *Fintech and corporate ESG performance—Based on the perspective of attention-based view*

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***Abstract:*** It brings unprecedented development opportunities and challenges for enterprise development. This paper selects Chinese A-share listed companies between 2011 and 2022 as the research sample, and from the attention-based view study finds that (1) Fintech has a more significant role in promoting the ESG performance of traditional firms and a relatively weaker role in enhancing the performance of Fintech firms, and (2) the positive effect of Fintech on corporate ESG performance increases significantly as firms pay more attention to new types of information technology such as artificial intelligence, blockchain, and big data.

## 1. Introduction

In recent years, the market's attention to corporate ESG performance has gradually deepened, and how to use Fintech to promote corporate ESG performance has become a widely debated topic in both academia and practice. Specifically, in terms of corporate internal governance, Fintech positively affects corporate ESG performance by improving credit resource allocation efficiency and risk-taking capacity and promoting corporate ESG practices by suppressing surplus management behavior (Liu, 2024). In terms of social and environmental responsibility, Fintech can enhance corporate ESG performance by facilitating access to credit resources and improving internal control and information transparency (Zhang Xiaoyan, 2024).

It can be seen that existing studies have explored the drivers of corporate ESG performance from the perspectives of corporate growth, transaction cost, resource perspective, and strategic corporate social responsibility, respectively, and there is a lack of micro-discussions from the perspective of the attentional basis view. The attention-based view is an important theoretical perspective in the field of management research. Therefore, this study provides an effective addition to the in-depth understanding of corporate ESG behavior from the perspective of the attention-based view.

The marginal contribution of this paper is mainly reflected in two aspects: first, it innovatively incorporates the theory of attention-based view and compares the shift of corporate attention to new information technologies (e.g., AI, blockchain, and big data) before and after 2016, it is found a significant difference in the impact of Fintech on corporate ESG performance. Second, it deepens the understanding of corporate motivations for social and environmental responsibility, and reveals the different impacts of Fintech on the ESG performance of different types of firms through heterogeneity analysis, further broadening the research field of the relationship between Fintech and corporate ESG performance.

## 2. Theoretical Basis and Research Assumptions

**(1) Fintech and corporate ESG performance**

1) Facilitating effects

The first is the influence of Fintech on internal promotion within enterprises, which improves firms' ESG performance by promoting healthy internal growth through technological advancements and lower agency costs, in addition to helping to limit excess managerial behaviors and encouraging firms' active engagement in ESG practices (Liu, Xihe, 2024; Sun, Mingrui, 2024)[1]. Fintech has also demonstrated its significance in easing businesses' funding limitations. It lessens the information asymmetry between financial institutions and businesses, and it makes a substantial quantitative contribution to the enhancement of the total factor productivity of businesses (Song Min, 2021).

Fintech development also has certain external promotion effects on enterprises. The innovation and development of Fintech play a crucial role in urban governance. Through three main channels-"improving R&D innovation," "promoting transformation and upgrading of industrial structure," and "increasing the employment of high-skilled labor ", Fintech significantly enhances the adaptability and resilience of the urban economy (Jin, Chaohui, 2024), providing a favorable environment for the improvement of corporate ESG performance.

Hypothesis 1a: Fintech promotes corporate ESG performance.

2) Debilitating effects

Internal debilitating effects. Enhancing firms' ESG performance through Fintech may increase firms' costs and resource consumption. It has been shown that ESG scores are negatively correlated with the financial performance of enterprises (Nollet, 2016).[3] This suggests that the investment in corporate ESG performance enhancement may not directly bring profits in the short term. At the same time, Fintech can increase enterprise value by reducing energy consumption, excessive energy reduction may lead to increased costs, thus affecting the return on costs (Serafeim, 2018).

External debilitating effects. While Fintech is developing rapidly, the regulation of its behavior shows a clear lag, which is reflected in the imperfection of the regulatory system, the lack of foresight, and the lagging regulatory means (Xu Wencheng, 2024).Meanwhile, the technological risks of Fintech should not be ignored. Technological immaturity, algorithmic flaws, and the potential loss of control of technology (Luo, 2024) may lead to the loss of control of data and application environments, which may disrupt the order of the Fintech market, affect the normal operation and management of enterprises, and ultimately inhibit the positive performance of enterprises in the field of ESG.

Hypothesis 1b: Fintech undermines corporate ESG performance.

**(2)The moderating role of Fintech attention**

The Attentional Basis View (ABV) asserts that corporate behavior is a product of the allocation and orientation of decision-makers attention (Barnett & Florida, 2008; Ocasio, 2011)[2], which provides insights into how attention is intertwined at the individual, socio-cognitive, and organizational levels, shaping corporate decision making and action, and provides a novel perspective for exploring corporate cognition, organizational structure, and strategy formulation (Ocasio, 1997).

In 2016, the Financial Stability Board released the Report on the Description and Analytical Framework of Fintech marking the deep integration of financial institutions and technology enterprises to promote the intelligent development of financial services. This indicates that enterprises have paid more attention to the application of new IT in finance.

Based on the principle of structural distribution of attention (Ocasio, 2018)[2], enterprises elevating their attention to technologies such as AI, blockchain, big data, etc, are actually

redistributing their limited attention resources. By focusing their attention on these key technology areas, enterprises are able to more effectively identify and utilize the opportunities presented by new technologies. For example, enterprises focus on the application of artificial intelligence, which can improve the profitability of the main business of manufacturing enterprises, reduce business risks, and increase corporate government subsidies. (Lv Minle, 2023).

Based on the principle of contextual attention (Ocasio, 2018)[2],decision makers configure their attention according to the specific environment and context they are in. At present, more enterprises focus on improving the innovation effect of tax rebates and obtaining more support, such as additional deductions for research and development expenses, which helps financial enterprises increase their investment in science and technology innovation, which in turn promotes the development of green finance to improve their own ESG performance (Li Chuntao, 2020).

Hypothesis 2a: Attention to Fintech enhances the positive relationship between Fintech and corporate ESG performance.

## 3. Research Design

**(1) Research Sample**

In this paper, listed companies in China's Shanghai and Shenzhen A-share markets are selected as the research object during the period from 2011 to 2022. The data are all from the Cathay Pacific WIND database. In screening the raw data, data from the financial industry were excluded; samples labeled as ST or ST*, with negative net assets, and with debt ratios exceeding 1 were removed; and all continuous variables were subjected to a 1% shrinkage. An annual balanced panel dataset of 31,504 firms was finally obtained.

**(2) Measurement of variables**

**1) Explained Variables**

This study draws on the research methodology of Sun Mingrui (2023) [1]and adopts the CSI ESG rating as a key indicator for measuring corporate ESG performance. The CSI ESG rating system is based on a standardized scoring system from 0 to 100 points based on the performance of a company's social responsibility, environmental responsibility, and corporate governance, with higher scores implying that the company's performance on the corresponding indicators is more excellent.

**2) Explanatory Variables**

This paper adopts the research methodology of Song Min et al. (2021) to construct the Fintech development index. Counted the number of Fintech companies in each city annually as an indicator of regional Fintech development levels, where a higher count indicates more advanced development. Given the right-skewed distribution of the original data, we applied the cube root transformation to mitigate the impact of extreme values. In the robustness test, we also used the square root transformation to confirm the stability of our results.

**3) Control variables**

In this paper, control variables are selected from the individual enterprise level and macroeconomic level. For individual enterprise level variables, this paper selects the return on assets (ROA); asset size (Size): logarithmic net assets; gearing ratio (Lev); enterprise age (Age); shareholding concentration (Top1); the two positions in one (Duality); cash flow (Cflow); Occupy by major shareholders (Occupy). At the macroeconomic level, we selected GDP per capita (AGDP); Gross Domestic Product (GDP); Industry Share (T3GDP).

## 4. Empirical Analysis

**(1) Regression results**

This paper explores the impact of Fintech on firms' ESG performance through regression analysis. The results in Table 1 show that without adding control variables (Column 1), Fintech significantly enhances firms' ESG performance. When adding control variables (Column 2) and further incorporating year and industry fixed effects (Column 3), the positive impact of Fintech remains significant, which indicates that the selected control variables effectively exclude other confounding factors in the model and support Hypothesis 1a.

Table 1: Regression results

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | ESG | ESG | ESG | E | S | G |
| Fintech | 0.00971*** | 0.0263*** | 0.0260*** | 0.0230*** | 0.0184** | 0.0185*** |
| | (5.67) | (6.31) | (6.10) | (4.86) | (2.68) | (3.34) |
| ROA | | 0.602*** | 0.660*** | -0.179 | 1.161*** | 1.007*** |
| | | (5.90) | (6.45) | (-1.57) | (7.03) | (7.57) |
| Lev | | -0.936*** | -0.937*** | -0.386*** | 0.219** | -1.862*** |
| | | (-17.87) | (-17.85) | (-6.61) | (2.60) | (-27.33) |
| Size | | 0.202*** | 0.206*** | 0.142*** | 0.300*** | 0.157*** |
| | | (16.07) | (16.19) | (10.02) | (14.63) | (9.48) |
| Age | | -0.176* | -0.130 | 0.171 | 0.458** | -0.638*** |
| | | (-2.02) | (-1.45) | (1.72) | (3.18) | (-5.48) |
| Top1 | | 0.245** | 0.246** | 0.00196 | -0.238 | 0.600*** |
| | | (2.92) | (2.94) | (0.02) | (-1.77) | (5.50) |
| Duality | | 0.00387 | 0.00625 | 0.0190 | 0.00108 | 0.0298 |
| | | (0.23) | (0.38) | (1.04) | (0.04) | (1.40) |
| Cflow | | -0.282** | -0.329*** | 0.167 | -0.214 | -0.591*** |
| | | (-3.22) | (-3.74) | (1.71) | (-1.51) | (-5.18) |
| Occupy | | -1.431*** | -1.593*** | -0.0270 | -1.348** | -2.398*** |
| | | (-4.74) | (-5.27) | (-0.08) | (-2.77) | (-6.11) |
| GDP | | 41.82*** | -123.7** | -265.9*** | 46.47 | -67.81 |
| | | (6.71) | (-3.06) | (-5.91) | (0.72) | (-1.29) |
| AGDP | | -43.23*** | 127.3** | 274.0*** | -47.90 | 69.72 |
| | | (-6.70) | (3.05) | (5.91) | (-0.72) | (1.29) |
| T3GDP | | -12.54*** | 32.88** | 73.89*** | -10.62 | 13.23 |
| | | (-8.55) | (3.02) | (6.10) | (-0.61) | (0.94) |
| _cons | 4.137*** | -87.89*** | 270.4** | 572.2*** | -105.0 | 155.2 |
| | (266.00) | (-6.58) | (3.09) | (5.89) | (-0.75) | (1.37) |
| N | 31474 | 30715 | 30715 | 30715 | 30540 | 30659 |
| R2 | | 0.030 | 0.038 | 0.054 | 0.101 | 0.148 |
| adj. R2 | | -0.125 | -0.118 | -0.099 | -0.045 | 0.011 |
| P | | | | | | |
| f | | | | | | |

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

With the increase of enterprises' attention to new information technology, the impact of Fintech on enterprises' ESG performance gradually changes, this paper takes 2016 as the time point and carries out regression analysis on the panel data of "year-enterprise-Fintech development"

before and after 2016 respectively, and the regression results are shown in Table 2, which are summarized in Table 2, and it can be seen that Fintech inhibits the improvement of enterprises' ESG performance before 2016 by column (1). It can be seen that Fintech inhibited the improvement of ESG performance of enterprises before 2016. From column (2), it can be concluded that Fintech significantly improved corporate ESG performance after 2016. Therefore, hypothesis 2a is valid.

Meanwhile, this paper regresses the relationship between the three dimensions of E, S, and G separately, and the regression results are shown in columns (3)-(5) of Table 3, which shows that Fintech significantly enhances the performance of corporate environmental governance (E) and social responsibility (S) after 2016, but inhibits the performance of corporate internal governance (G).

Table 2: Regression results of before and after 2016

| | Before 2016 | After 2016 | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | ESG | ESG | E | S | G |
| Fintech | -0.0215* | 0.0242** | 0.0225* | 0.0508*** | -0.0235* |
| | (-2.34) | (2.59) | (1.98) | (3.30) | (-2.01) |
| ROA | 0.307 | 0.246* | -0.271 | 0.729*** | 0.356* |
| | (1.16) | (2.07) | (-1.88) | (3.72) | (2.40) |
| Lev | -0.804*** | -1.043*** | -0.658*** | 0.164 | -1.885*** |
| | (-7.47) | (-13.45) | (-6.96) | (1.28) | (-19.42) |
| Size | 0.218*** | 0.238*** | 0.179*** | 0.312*** | 0.251*** |
| | (6.98) | (11.24) | (6.95) | (8.96) | (9.50) |
| Age | -0.656** | 0.104 | -0.533* | 0.995** | -0.897*** |
| | (-3.29) | (0.50) | (-2.11) | (2.91) | (-3.45) |
| Top1 | 0.172 | -0.314* | -0.399* | -0.440 | -0.0474 |
| | (0.96) | (-2.26) | (-2.35) | (-1.92) | (-0.27) |
| Duality | -0.0355 | 0.0165 | 0.0320 | -0.00888 | 0.0383 |
| | (-1.06) | (0.76) | (1.21) | (-0.25) | (1.41) |
| Cflow | -0.340* | -0.158 | 0.293* | -0.117 | -0.477*** |
| | (-2.34) | (-1.42) | (2.16) | (-0.64) | (-3.43) |
| Occupy | -1.123* | -1.190** | -0.307 | -1.422* | -1.423** |
| | (-2.05) | (-2.93) | (-0.62) | (-2.12) | (-2.80) |
| GDP | -103.1 | -131.2*** | -292.1*** | 81.59 | -101.0* |
| | (-1.62) | (-3.32) | (-6.07) | (1.25) | (-2.05) |
| AGDP | 110.3 | 135.6*** | 303.1*** | -83.98 | 104.2* |
| | (1.62) | (3.32) | (6.08) | (-1.25) | (2.04) |
| T3GDP | 3.825 | 45.72*** | 99.90*** | -16.01 | 27.90 |
| | (0.75) | (3.63) | (6.51) | (-0.77) | (1.77) |
| _cons | 192.3 | 272.4*** | 595.8*** | -186.1 | 220.4* |
| | (1.61) | (3.32) | (5.95) | (-1.37) | (2.15) |
| N | 9339 | 20956 | 20956 | 20956 | 20935 |
| R2 | 0.044 | 0.030 | 0.034 | 0.073 | 0.074 |
| adj. R2 | -0.256 | -0.217 | -0.212 | -0.163 | -0.162 |
| P | | | | | |
| f | | | | | |

**(2) Robustness tests**

**1) Endogeneity issues**

a. Instrumental variable method

In this paper, the number of bank Fintech patents is used as an instrumental variable to construct a panel dataset of "City-Year-Fintech Patent Application" from 2011 to 2022, and analyzed by two-stage least squares regression. The results of the first stage (Column1) show that the instrumental variables are significantly positively correlated, which verifies their validity. In the second-stage regression (Column2), the coefficient of Fintech is still significantly positive, which is consistent with the benchmark regression and confirms the robustness of the conclusions of this

paper.

b. Double Difference (DID) methodology

In March 2016, the Financial Stability Board released the Fintech Description and Analysis Framework Report marking the formal application of technologies in the financial sector. Using this policy as an exogenous shock, this paper constructs a double difference model to address endogeneity. Drawing on Fang Sheng's (2021) study, cities are divided into high and low groups based on the median of the Fintech Development Index in 2015, and cities above the median are taken as the experimental group, while the rest are the control group. The double difference model regression results (Column 3 of Table 3) significantly show that Fintech development has a positive contribution to corporate ESG performance.

Table 3: Robustness check

| | (1) | (2) | （3） | (4) |
|---|---|---|---|---|
| | Instrumental variable method | | DID | Replacement |
| | Fintech | ESG | ESG | AESG |
| Patent | 1.526*** | | | |
| | (194.05) | | | |
| Fintech | | 0.0133*** | | 0.103*** |
| | | (7.05) | | (5.77) |
| Fintech_did | | | 0.0794*** | |
| | | | (5.36) | |
| Year | Control | Control | Control | Control |
| Ind | Control | Control | Control | Control |
| Control variable | Control | Control | Control | Control |
| _cons | -38.20*** | 0.597 | -0.147 | 594.6 |
| | (-33.75) | (1.02) | (-0.84) | (1.63) |
| N | 30715 | 30715 | 30715 | 30715 |
| R2 | 0.640 | 0.145 | 0.145 | 0.048 |
| adj. R2 | 0.639 | 0.143 | 0.143 | -0.106 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

**2) Replacement of explanatory variables**

The CSI ESG quarterly index ratings are used to take the mean value as a proxy variable for annual ESG performance. The results (Table 3, column 4) are still positive and significant, and the test conclusions of this paper are still robust.

## 5. Heterogeneity analysis

Fintech firms typically do not compete directly with traditional banks, but rather use technology to fill gaps in financial services or provide more optimized solutions. They can be startups or the technology arm of an already existing financial institution.

This paper delves into the mechanism of the impact of Fintech development on ESG (environmental, social, governance) performance through a sample of 45 A-share listed Fintech companies (Fintech1) selected from the GuotaiAnn-Fintech database. It is found that the level of Fintech has a significant positive effect on enhancing the ESG performance of traditional firms (Table 4, Column 1), while the ESG promotion effect on Fintech firms themselves is more moderate in comparison (Table 4, Column 5).

Further disaggregation of the E, S and G dimensions reveals that Fintech significantly enhances Fintech firms' scores on those three dimensions (Table 4, columns 2-4, 6-8), but does not show a significant effect in promoting traditional firms' social responsibility (S) scores. This finding reveals the differential impact path of Fintech in promoting corporate sustainability.

Table 4: Heterogeneity Regression Results

| | Traditional | | | | Fintech | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | ESG | E | S | G | ESG | E | S | G |
| Fintech1 | 0.0253*** | 0.0219*** | 0.00519 | 0.0181** | 0.142** | 0.185** | 0.200** | 0.131* |
| | (5.91) | (4.62) | (0.75) | (3.26) | (3.04) | (2.62) | (2.80) | (2.00) |
| Year | Control | Control | Control | Control | Control | Control | Control | Control |
| Ind | Control | Control | Control | Control | Control | Control | Control | Control |
| Control variable | Control | Control | Control | Control | Control | Control | Control | Control |
| _cons | 281.1** | 563.9*** | -162.9 | 162.6 | -574.2 | 1236.1 | 677.4 | -592.7 |
| | (3.19) | (5.78) | (-1.15) | (1.42) | (-0.86) | (1.23) | (0.66) | (-0.63) |
| N | 30379 | 30379 | 30379 | 30323 | 316 | 316 | 316 | 316 |
| R2 | 0.038 | 0.054 | 0.099 | 0.148 | 0.255 | 0.169 | 0.238 | 0.305 |
| adj. R2 | -0.117 | -0.098 | -0.046 | 0.010 | 0.023 | -0.091 | -0.000 | 0.088 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

## 6. Discussion and conclusions

This paper draws the following main conclusions by conducting an in-depth study on the relationship between Fintech and corporate ESG performance, and comprehensively utilizing theoretical tools such as empirical analysis, heterogeneity analysis, and attention-based view:

By analyzing the heterogeneity of traditional enterprises and Fintech companies, this paper finds differences in the impact of Fintech on the ESG performance of different types of enterprises. Specifically, Fintech has a more significant role in promoting the ESG performance of traditional firms, while its enhancing effect on Fintech firms is relatively weak. This may be due to the fact that Fintech companies themselves have an advantage in Fintech applications, so the room for enhancing their ESG performance is relatively small.

Based on the attention-based view, this paper further explores the impact of changes in corporate attention to new information technologies on the relationship between Fintech and corporate ESG performance. It is found that the positive effect of Fintech on corporate ESG performance has significantly increased after 2016, with the increase in corporate attention to new information technologies such as artificial intelligence, blockchain, and big data. This suggests that enterprises' rational allocation of attention resources and increased attention and investment in Fintech can more effectively promote the improvement of corporate ESG performance.

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