

# *An Empirical Analysis of the Impact of Fintech on Short-term Lending and Long-term Investment in Enterprises — Based on Data from Listed Companies in China*

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**Abstract.** Based on the data of Chinese listed companies from 2012 to 2023, this study examines the impact of financial technology on enterprises' short-term borrowing and long-term investment behaviors. The findings are as follows: Fintech exerts a significantly negative impact on both short-term borrowing and long-term investment of enterprises, which indicates that fintech can curb such behaviors. After a series of model reconstruction and tests—including replacing core explanatory variables, adopting random effects models and fixed effects models—the aforementioned negative impact remains significant. Mechanism tests show that fintech can further inhibit enterprises' short-term borrowing and long-term investment behaviors by alleviating corporate financing constraints and improving the level of corporate financialization. For enterprises in high-tech industries and those without major operational defects, the negative impact of fintech on their short-term borrowing and long-term investment is significant; whereas this effect is not obvious in non-high-tech industries and enterprises with major operational defects.

**Keywords:** fintech, short-term loan and long-term investment, financing constraints, financialization degree

## 1. Introduction

That the pattern of "short-term borrowing for long-term investment" among enterprise entities within China has surfaced as a focal point where regulatory and academic discourses converge may be noted. Described, this phenomenon should be—as enterprises deploying instruments characterized by limited maturity in pursuit of capital outlays whose expected durations extend significantly beyond the financing period. From such practice can be discerned a marked misalignment between maturational structures of debts assumed and assets acquired. To this structural fissure accrues a tangible intensification reflected both in the elevation of liquidity burdens endubled by corporate bodies and in rising leverage coefficients—a pattern traceable through incremental manifestations of systemic risk observable when instances such as default or financial contagion arise. INE>To enumerate particularities evidenced by Founder Group and Huachen Group would reveal how dependence upon transient funding arrangements exposes system-level fragilities; these cases, by their repeated engagement with short-term lending conduits, serve to underscore vulnerabilities latent

within the national finance configuration inhering in China. Framed within the dynamics prescribed by established protocols governing risk aggregation and requisite liquidity thresholds, inclinations on the part of the banking sector toward authorizing funding facilities predominantly of abbreviated duration continually recur. That business operators, witnessing protracted constraints regarding access to stable and enduring sources of finance, habitually elect cyclical renewals of immediate debt obligations to underwrite investments programmatically structured for extended timelines emerges clearly from available evidence. Against such a backdrop, pertinence attaches itself to initiatives expressly conceived for suppressing the dependence upon "short-term borrowing for long-term investment," suggesting the potential for recalibration at institutional and policy levels which merits ongoing scholarly interrogation.

Notwithstanding alone against escalating financial vulnerability and emergent macroeconomic incoherences is this initiative; substantiated, too, finds its pertinence within those undertakings whereby the efficiency vectors embedded in systemic financial operations observably undergo recalibration at the compositional plane, while opacity characterizing informational exchanges between banking entities and corporate actors—attenuated incrementally—alters configurational patterns of enterprise capital aggregation. Evinced through layable syntheses resident in extant scholarly discourses stands fintech advancement as an agential accelerant: variegation imposed upon regimes of corporate liquidity procurement surfaces repeatedly across several analytical axes—the decrement of cost-of-capital infrastructures, dynamic refashioning of methodologies underpinning credit-assignative processes, and volumetric expansion discernible among extra-system borrowing conduits pronounced most saliently amongst such transformations. Observable from this mosaic of empirical demonstrations are lines of inquiry opening toward operational trajectories demanding heightened interrogation—in market or institutional spheres distinguishable variability consistently arises. Elucidation through theoretical engagement yields new illumination as per fintech innovations' modalities permeate micro-firm financing behaviors, thereby augmenting discourse surrounding idealized architecture delimiting firm-level maturity equilibriums within dual domains of fund acquisition and investment outlay; provided also, to regulatory authorities, expands a spectrum of precise institution-oriented calibrations viable for prospective deployment. Appropriate thus by enterprises becomes advisement shaped via frameworks revisited with attention to borrowings' structural reorientation—a trajectory that simultaneously modulates susceptibilities inherent in asset-liability discordances. In tripartite fashion articulates itself herein the study's contributive matrix: Primarily, reconceptualization emerges, abjuring loci fixed solely on governmental regulation schema or endogenous governance variables; centralizes instead the analytic gaze upon fintech's role newly foregrounded vis-à-vis discussions entangling corporate shortfalls in maturity synchronies, scrutinizing the sphere anew as possible corrector assessed by methodical exactitude. Furtherance materializes through differential isolation of intermediary mechanisms, transcending superficial associativity by unraveling two predominant nexuses transmitting impact—namely, mitigation apparent in interest burdens encumbering firms, plus adaptive gradations evident in levels of balance-sheet financialization. Revealed lastly in heterogeneity analyses are stratifications defining fintech's operative resonance across heterogeneous organizational cohorts, thus refining both explanatory precision and interpretative extensiveness attaching to subsequent findings derived therefrom.

## 2. Review of the literature

Within the scholarly inquiry into financial technology, if one scrutinizes its origination backdrop, it becomes observable that fintech has taken form through the utilization of determinants favoring the

progress of finance—among which the mitigation of information asymmetry extant within markets, the attenuation of transaction-related expenditures, accompanied by the amplification of both economic and societal valuation are included. From these facets, a pattern emerges whereby the advent of fintech may be attributed to its strategic harnessing of circumstances propitious for the advancement of contemporary financial systems [1]. Examining the evolutionary trajectory from a developmental process viewpoint, fintech—through internet finance serving in an interstitial capacity—emerges as a manifestation whose innovation originates with nascent technological infrastructures and is animated by data operating reciprocally as a dual-engine catalyst. New modalities and instruments for the identification, extraction, estimation, as well as quantization of credit have been harnessed within this paradigm; observable is also the continuous translation of present financial operational architectures, proceduralities, or product typologies into avant-garde fiscal configurations. Discernible from such developments are revolutionary alterations across market topographies: among these, it becomes apparent that not only have unprecedented financial commodities materialized, but also expanded spectra of service requirements have proliferated, novel enterprise archetypes have arisen, and methodologies pertaining to credit access, evaluative ranking, alongside risk stratification have reconstituted established norms [1-3]. Constituted fundamentally by technological substrata, the supply facet within fintech can be distinguished by its direct reliance upon foundational technologies. Through these technologically mediated processes, mechanisms facilitating both the identification and cultivation of customer demand have been continually orchestrated. Seen among salient features delineating fintech are properties of digitalization intertwined with network-oriented frameworks, inclusiveness manifesting across diverse user bases, as well as attributes permitting resource sharing adheblue to regulatory compliance paradigms. From such collective phenomena, a unique operational ecology specific to fintech emerges [4]. Considerable from the vantage point of pblueominant modeling, fintech's operational methodology within China presents a markedly demand-driven orientation, manifesting transformations in both institutional frameworks and credit allocative paradigms observable among domestic banks. By this process, traditional parameters governing business architectures and client constituencies are subjected to reconfiguration not previously encountered within the conventional financing models long established. Evidenced by such restructurings is a disruptive imprint—situated centrally within these emergent dynamics—which accrues substantive implications for pre-existing financial modalities integral to China's banking sector [5].

Within the ambit of corporate practices involving short-tenure borrowings directed towards investments of an extended temporal scope, to be observed is that financing undertakings by enterprises function pblueominantly in accordance with strategic determinations formulated at higher managerial echelons—decisions aimed persistently toward augmentation of stakeholder or shareholder value. Apparent from such institutional orientations is the manner in which financial maneuvers are invariably subsumed under strategic imperatives, their ultimate rationale being inseparable from aspirations relating to organizational worth as perceived by its primary beneficiaries [6]. A distinct form of maturity mismatch within the sphere of corporate finance is exemplified by the utilization of short-term borrowings for the undertaking of long-horizon investments. Observed from the standpoint of supply-side institutional actors, banks—whose operational logic adheres to doctrines prioritizing profit-making and risk mitigation—demonstrate a consistent inclination towards constraining access to credit with extended maturities. Noted in banking behavior are hesitation and retrenchment regarding loans of longer duration, discernible especially in instances where the temporally distant realization of investment returns obscures assessments of future cash flows and elevates exposure to default contingencies [7]. Observable

from the tendencies exhibited by demand constituencies, compelled are enterprises to resort to short-term borrowing as a principal response to the exigencies of sustained investment projects intended for longer durations. Emerges herein an inclination concurrent with aspirations toward operational scale expansion and the pursuit of cost-minimization objectives; thus is it that recourse to temporary financing instruments by firms confronting enduring capital requisites may be inferblue [8]. Among enterprises situated within a shared sector or geographical locality, discernible is the propensity for such conduct to engender collective behavioral phenomena; thus, manifestations of both advantageous emulation and detrimental diffusion of risk can be observed as precipitated by this dynamic [9]. Overconfident managers' preference for short-term debt financing [10] fuels excessive investment, and the accommodative short-term lending environment exacerbates this irrational behavior, forming a vicious cycle [11]. In this context, to short-term financing utilized for long-horizon investments emerges as a significant pblueicament for enterprises, within which persistent pressures regarding debt amortization are continually confronted by managerial actors. It is observable from such arrangements that escalated exposures to liquidity risk materialize, the effects of which frequently extend into subsequent operational frameworks of the organization, producing adverse implications therein [9]. Considerblue from the vantage point of refining corporate strategies concerning both short-term indebtedness and protracted investment undertakings, emphasis appears placed on the recalibration of capital structuration within firms, thereby achieving diminution in exposure associated with maturity incongruence. Evidenced by various organizational practices is also an accentuation upon fortification of internal oversight mechanisms—enterprise actors, through enhancement of these controls, seek to preclude investment activities lacking rational underpinning. Further observable in emergent business phenomena is a pronounced orientation toward diversification and novelization of financing avenues, the result of which is manifestly the proliferation of alternative funding modalities accessible to corporate entities [12-14].

Upon examination of existing scholarly exploration into the nexus between fintech innovations and both corporate short-term borrowing as well as long-term investment patterns, discernible appear three principal axes constituting its foundational influence logic. Manifest as the initial axis is the optimization of financial resource allocation—a process within which resides the recalibration of market interest rate determination methodologies and cblueit dispersion schematics. Addressed by such refinements are distortionalities pertaining to capital pricing, observable in traditional financial frameworks. Situated at the intersection of finance and technology, big data platform utilization emerges— amplification it brings to informational resolution capacities possessed by financial institutions was noted by recent practitioners. Rendebblue thereby is a context wherein precision identification of high-caliber enterprises occurs, subsequent facilitation of resource endowment being directed with augmented selectivity toward entities engaged in initiatives necessitating an extended temporal development arc. It can be inferblue from these dynamics that the distinctive phenomenon of concurrent enhancement of short-term borrowing structures alongside innovations in long-term investment trajectories benefits materially from these regime shifts [15]. Fostering Financial Market Competition and Innovation. Fintech disrupts traditional banking's information monopoly, intensifying industry competition [16]. Compelled thereby are banking entities to broaden the horizon of long-duration credit facilitation, in parallel with a contraction manifest within regulatory expenditure—a tendency that engenders, among financial establishments, an impetus towards advancing perpetuable loan mechanisms. Evident it becomes from these interplays that competition internal to the sector precipitates structural novelties in service provision schemes, through which borrowers belonging mainly to commercial enterprises acquire access to divergent and more equilibrated temporal financing alternatives [7,17,18]. The enhancement of corporate investment

efficiency emerges as a resultant phenomenon observable in contexts where advancements in financing efficiency, attributable to fintech innovation, manifest. Reduced dependence on short-term borrowing by corporations can thus be inferred from such financial technological interventions; with this diminished reliance, those patterns characterizing irrational investments are also subject to notable restraint. A mitigation of the imbalance—whereby corporations historically engaged in short-term fundraising for long-term allocation—becomes discernible through these mechanisms afforded by fintech-enabled finance optimization [19].

### 3. Design of the study

#### 3.1. Model setting

In order to further explore the internal relationship between fintech and enterprise short-term loan and long-term investment, this study sets up the following model:

$$SLLI_{it} = \alpha_0 + \beta_0 Fintech_{it} + \sum \gamma_k Control_{it} + Firm_i + Year_t + \varepsilon_{it} \quad (1)$$

$SLLI$        $SLLI$        $Fintech_{it}$  ,  $\sum \gamma_k Control_{it}$  ,  $Firm_i$ ,  $Year_t$ ,  $Fintech_{it}$ ,  $\varepsilon_{it}$  , Represents  $\sum \gamma_k Control_{it}$ ,  $Firm_i$ ,  $Year_t$ ,  $\varepsilon_{it}$  the short-term loan and long-term investment of enterprises  $\alpha_0$  , the development  $\gamma_k$ ,  $\beta_0$  level of financial technology, a  $\alpha_0$  series of control  $\beta_0$  variables  $\gamma_k$  , individual fixed effects, time fixed effects and error terms. Represents the constant term, and respectively represent the coefficients of variables.

#### 3.2. Definition of variables

As for the dependent variable, that is, the measurement of short-term loans and long-term investment of enterprises, this study uses the difference between the ratio of short-term liabilities and short-term assets of enterprises to investigate it, referring to the practice of Liu Xiaoguang and Liu Yuanchun [20].

Regarding the core explanatory variable measuring fintech development level, this study employs word frequency analysis from annual reports of commercial banks. Specifically, we extract text data using Python to form a dataset. Through keyword search, matching, and frequency statistics based on relevant characteristics, we systematically categorize and aggregate key directional frequencies to ultimately calculate the fintech development level indicator.

Regarding control variables, this study selects a series of control variables from the enterprise level and macro level, including: corporate profitability, corporate solvency, corporate liquidity level, board size, executive compensation, corporate age, price-earnings ratio, equity concentration, regional economic development level, industrial structure, and regional financial development level.

#### 3.3. Data sources

This study selected data from Chinese A-share listed companies between 2012 and 2023 and conducted the following processing: First, excluding companies with ST, \*ST, PT, suspended listing, or terminated listing status, as well as those in the financial industry; Second, applying a 5% trimming to all continuous variables; Third, matching variable data. Regarding data sources, the fintech development level indicator was derived from commercial bank annual reports, while other

corporate-level and macro-level data were obtained from the Guotai An Database (CSMAR) and Wind Database respectively.

## 4. Empirical analysis

### 4.1. Descriptive statistics

Descriptive statistics of each variable are shown in Table 1.

Table 1. Descriptive statistics

| VarName   | Obs   | Mean   | SD     | Min    | Max     |
|-----------|-------|--------|--------|--------|---------|
| SLLI      | 36669 | -0.090 | 0.142  | -0.447 | 0.136   |
| Fintech   | 41843 | 3.401  | 1.352  | 0.693  | 5.694   |
| ROA       | 41627 | 0.038  | 0.049  | -0.080 | 0.129   |
| DebtRatio | 36173 | 1.227  | 0.466  | 0.800  | 2.721   |
| Cash      | 41591 | 0.677  | 1.293  | -1.964 | 3.907   |
| Board     | 30545 | 8.379  | 1.366  | 6.000  | 11.000  |
| Salary    | 30483 | 0.268  | 0.281  | 0.013  | 1.065   |
| Age       | 41625 | 9.673  | 7.886  | 0.000  | 25.000  |
| PE        | 34853 | 63.560 | 67.785 | 9.560  | 276.043 |
| Top5      | 41383 | 0.487  | 0.183  | 0.241  | 0.856   |
| Industry  | 41831 | 54.999 | 10.903 | 41.600 | 82.700  |
| GDP       | 41831 | 10.730 | 0.676  | 9.370  | 11.762  |
| Loan      | 41831 | 1.664  | 0.434  | 1.013  | 2.432   |

### 4.2. Basic regression analysis

The regression results are shown in Table 2. With the addition of control variables, the impact of fintech on enterprises' short-term loans and long-term investment is always significantly negative, indicating that fintech alleviates enterprises' short-term loans and long-term investment behavior.

Table 2. Basic regression results

|           | (1)                   | (2)                    | (3)                    | (4)                    |
|-----------|-----------------------|------------------------|------------------------|------------------------|
| VARIABLES | SLLI                  | SLLI                   | SLLI                   | SLLI                   |
| Fintech   | -0.0020***<br>(-2.95) | -0.0023***<br>(-3.90)  | -0.0016**<br>(-2.33)   | -0.0027***<br>(-3.58)  |
| ROA       |                       | -1.4908***<br>(-59.93) | -1.5803***<br>(-50.67) | -1.5790***<br>(-50.60) |
| DebtRatio |                       | -0.0261***<br>(-14.29) | -0.0148***<br>(-6.49)  | -0.0143***<br>(-6.29)  |

Table 2. (continued)

|                 |            |           |            |            |
|-----------------|------------|-----------|------------|------------|
| Cash            | -0.0252*** |           | -0.0241*** | -0.0242*** |
|                 | (-43.51)   |           | (-35.59)   | (-35.71)   |
| Board           |            |           | -0.0012*   | -0.0008    |
|                 |            |           | (-1.68)    | (-1.10)    |
| Salary          |            |           | 0.0480***  | 0.0480***  |
|                 |            |           | (12.10)    | (12.04)    |
| Age             |            |           | -0.0011*** | -0.0010*** |
|                 |            |           | (-7.98)    | (-7.61)    |
| PE              |            |           | -0.0001*** | -0.0001*** |
|                 |            |           | (-7.76)    | (-7.50)    |
| Top5            |            |           | 0.0567***  | 0.0586***  |
|                 |            |           | (10.53)    | (10.87)    |
| Industry        |            |           |            | -0.0004*** |
|                 |            |           |            | (-3.16)    |
| GDP             |            |           |            | 0.0087***  |
|                 |            |           |            | (5.49)     |
| Loan            |            |           |            | 0.0063*    |
|                 |            |           |            | (1.93)     |
| Constant        | -0.0816*** | 0.0242*** | -0.0037    | -0.0862*** |
|                 | (-31.20)   | (6.14)    | (-0.43)    | (-4.28)    |
| Observations    | 36,669     | 31,760    | 23,353     | 23,347     |
| Number of stkcd | 4,918      | 4,782     | 3,260      | 3,255      |

Note: z-statistics in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### 4.3. Robustness test

To further examine the impact of fintech on corporate short-term borrowing and long-term investment, this study conducted the following robustness tests: First, we replaced the core explanatory variable with a prefecture-level city's fintech development index, as shown in Column (1) of Table 3. Second, we re-estimated the regression using both random effects and fixed effects models, with results presented in Columns (2) and (3) of Table 3. The findings indicate that the coefficient for the core explanatory variable Fintech remains consistently significantly negative, thereby further confirming that fintech can mitigate the phenomenon of enterprises engaging in short-term borrowing and long-term investment.

Table 3. Results of robustness test

| VARIABLES       | (1)<br>Replace core explanatory variables | (2)<br>random effect model | (3)<br>fixed effect model |
|-----------------|---|----------------------------|---------------------------|
| Fintech         | -0.0000***<br>(-3.90)                     | -0.0027***<br>(-3.58)      | -0.0095***<br>(-6.46)     |
| ROA             | -1.5670***<br>(-47.37)                    | -1.5790***<br>(-50.60)     | -1.6358***<br>(-39.74)    |
| DebtRatio       | -0.0144***<br>(-5.97)                     | -0.0143***<br>(-6.29)      | -0.0035<br>(-1.21)        |
| Cash            | -0.0244***<br>(-34.36)                    | -0.0242***<br>(-35.71)     | -0.0249***<br>(-33.22)    |
| Board           | -0.0004<br>(-0.59)                        | -0.0008<br>(-1.10)         | -0.0001<br>(-0.08)        |
| Salary          | 0.0496***<br>(11.88)                      | 0.0480***<br>(12.04)       | 0.0699***<br>(9.86)       |
| Age             | -0.0010***<br>(-6.92)                     | -0.0010***<br>(-7.61)      | -0.0004<br>(-0.48)        |
| PE              | -0.0001***<br>(-6.95)                     | -0.0001***<br>(-7.50)      | -0.0002***<br>(-9.52)     |
| Top5            | 0.0636***<br>(11.21)                      | 0.0586***<br>(10.87)       | 0.1100***<br>(11.11)      |
| Industry        | 0.0004*<br>(1.72)                         | -0.0004***<br>(-3.16)      | 0.0001<br>(0.26)          |
| GDP             | 0.0058***<br>(3.63)                       | 0.0087***<br>(5.49)        | 0.0242***<br>(2.59)       |
| Loan            | -0.0019<br>(-0.52)                        | 0.0063*<br>(1.93)          | 0.0022<br>(0.32)          |
| Constant        | -0.0963***<br>(-4.54)                     | -0.0862***<br>(-4.28)      | -0.3000***<br>(-3.17)     |
| Observations    | 21,123                                    | 23,347                     | 23,347                    |
| Number of stkcd | 2,969                                     | 3,255                      | 3,255                     |

Note: z-statistics in parentheses,\*\*\* p<0.01,\*\* p<0.05,\* p<0.1

#### 4.4. Mechanism tests

As shown in columns (1) to (2) of Table 4, fintech alleviates corporate short-term borrowing for long-term investment by easing financing constraints. Specifically, it enables companies to secure long-term funding at more reasonable costs while expanding their financing options, thereby reducing reliance on short-term loans for extended projects. Columns (3) to (4) demonstrate that fintech further mitigates this behavior by enhancing corporate financialization. This means fintech

development helps businesses generate returns through strategic investments, strengthens capital reserves, and reduces dependence on short-term loans for long-term projects.

Table 4. Mechanism test results

| VARIABLES       | (1)                    | (2)                    | (3)                    | (4)                    |
|-----------------|------------------------|------------------------|------------------------|------------------------|
|                 | SA_index               | SLLI                   | FinRatio               | SLLI                   |
| SA_index        |                        | -0.0089**<br>(-2.19)   |                        |                        |
| FinRatio        |                        |                        |                        | -0.0207**<br>(-2.05)   |
| Fintech         | -0.0052***<br>(-7.97)  | -0.0029***<br>(-3.73)  | 0.0020***<br>(3.31)    | -0.0026***<br>(-3.45)  |
| ROA             | 0.1120***<br>(5.94)    | -1.5813***<br>(-50.65) | 0.0549***<br>(2.92)    | -1.5768***<br>(-50.61) |
| DebtRatio       | -0.0055***<br>(-4.15)  | -0.0144***<br>(-6.32)  | 0.0006<br>(0.43)       | -0.0152***<br>(-6.66)  |
| Cash            | -0.0010***<br>(-3.06)  | -0.0242***<br>(-35.75) | 0.0010***<br>(2.84)    | -0.0243***<br>(-35.70) |
| Board           | 0.0013**<br>(2.40)     | -0.0007<br>(-1.02)     | -0.0018***<br>(-3.52)  | -0.0009<br>(-1.22)     |
| Salary          | 0.0601***<br>(19.43)   | 0.0475***<br>(11.90)   | 0.0478***<br>(16.70)   | 0.0495***<br>(12.25)   |
| Age             | -0.0255***<br>(-90.30) | -0.0012***<br>(-7.71)  | 0.0014***<br>(10.22)   | -0.0010***<br>(-7.05)  |
| PE              | 0.0001***<br>(6.52)    | -0.0001***<br>(-7.51)  | 0.0000***<br>(3.64)    | -0.0001***<br>(-7.15)  |
| Top5            | -0.0375***<br>(-8.29)  | 0.0590***<br>(10.94)   | 0.0260***<br>(6.17)    | 0.0566***<br>(10.53)   |
| Industry        | -0.0013***<br>(-7.57)  | -0.0004***<br>(-2.87)  | 0.0008***<br>(6.04)    | -0.0004***<br>(-3.21)  |
| GDP             | -0.0965***<br>(-31.13) | 0.0079***<br>(4.93)    | 0.0251***<br>(14.71)   | 0.0086***<br>(5.41)    |
| Loan            | -0.0547***<br>(-18.55) | 0.0052<br>(1.58)       | 0.0133***<br>(5.23)    | 0.0059*<br>(1.84)      |
| Constant        | -2.3969***<br>(-73.86) | -0.1110***<br>(-4.80)  | -0.3142***<br>(-16.35) | -0.0815***<br>(-4.04)  |
| Observations    | 25,595                 | 23,347                 | 25,222                 | 23,015                 |
| Number of stkcd | 3,451                  | 3,255                  | 3,365                  | 3,177                  |

Note: z-statistics in parentheses,\*\*\* p<0.01,\*\* p<0.05, \* p<0.1

## 4.5. Heterogeneity

The results of heterogeneity analysis indicate that financial technology exerts a significant negative impact on the short-term borrowing and long-term investment behaviors of enterprises in high-tech industries and those without major defects; nevertheless, this effect is nearly negligible for non-high-tech enterprises and those with major defects. Enterprises in high-tech industries and those without major defects typically boast technological advantages, promising growth prospects, and standardized governance structures. By virtue of its big data capabilities, financial technology can accurately identify the premium attributes of such enterprises, facilitate efficient capital allocation, alleviate their long-term financing constraints, and thereby reduce their reliance on short-term financing. On the contrary, non-high-tech enterprises and those with major defects are often plagued by persistent development predicaments due to high risks, information asymmetry, or inadequate governance. Financial technology struggles to effectively screen and support these enterprises, leaving traditional financing bottlenecks unresolved and thus weakening the intervention effect of financial technology.

Table 5. Heterogeneity

|           | (1)                    | (2)                      | (3)                   | (4)                    |
|-----------|------------------------|--------------------------|-----------------------|------------------------|
| VARIABLES | High-tech industry     | Non-high-tech industries | There are major flaws | No major defects exist |
| Fintech   | -0.0059***<br>(-5.77)  | 0.0000<br>(0.03)         | -0.0056<br>(-0.71)    | -0.0028***<br>(-3.57)  |
| ROA       | -1.7004***<br>(-42.21) | -1.4241***<br>(-27.52)   | -2.2080***<br>(-6.15) | -1.5772***<br>(-50.18) |
| DebtRatio | -0.0087***<br>(-2.84)  | -0.0180***<br>(-5.06)    | -0.0316*<br>(-1.73)   | -0.0141***<br>(-6.14)  |
| Cash      | -0.0268***<br>(-29.24) | -0.0214***<br>(-21.29)   | -0.0243***<br>(-3.46) | -0.0242***<br>(-35.54) |
| Board     | -0.0017*<br>(-1.84)    | 0.0008<br>(0.68)         | -0.0038<br>(-0.61)    | -0.0007<br>(-1.04)     |
| Salary    | 0.0495***<br>(9.63)    | 0.0542***<br>(7.86)      | 0.0826*<br>(1.85)     | 0.0480***<br>(11.92)   |
| Age       | -0.0009***<br>(-4.49)  | -0.0011***<br>(-5.02)    | 0.0006<br>(0.45)      | -0.0011***<br>(-7.69)  |
| PE        | -0.0002***<br>(-9.30)  | -0.0001**<br>(-1.99)     | -0.0002<br>(-1.45)    | -0.0001***<br>(-7.46)  |
| Top5      | 0.0650***              | 0.0559***                | 0.0204                | 0.0593***              |

Table 5. (continued)

|                 |           |            |         |            |
|-----------------|-----------|------------|---------|------------|
|                 | (8.95)    | (6.48)     | (0.42)  | (10.88)    |
| Industry        | -0.0002   | -0.0005**  | 0.0014  | -0.0004*** |
|                 | (-1.02)   | (-2.16)    | (1.01)  | (-3.16)    |
| GDP             | 0.0084*** | 0.0091***  | 0.0075  | 0.0088***  |
|                 | (4.05)    | (3.42)     | (0.51)  | (5.53)     |
| Loan            | 0.0038    | 0.0095*    | -0.0184 | 0.0064*    |
|                 | (0.93)    | (1.71)     | (-0.51) | (1.95)     |
| Constant        | -0.0687** | -0.1276*** | -0.0414 | -0.0886*** |
|                 | (-2.54)   | (-3.92)    | (-0.22) | (-4.35)    |
| Observations    | 14,283    | 9,063      | 207     | 23,140     |
| Number of stkcd | 2,171     | 1,244      | 154     | 3,254      |

Note: z-statistics in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 5. Conclusions

This study, drawing on data of Chinese listed companies spanning the period from 2012 to 2023, investigates the impact of financial technology on enterprises' short-term borrowing and long-term investment behaviors. The findings indicate that: First, financial technology exerts a significant negative impact on both enterprises' short-term borrowing and long-term investment behaviors, which implies that financial technology can alleviate such borrowing and investment patterns of enterprises; Second, after conducting a series of robustness tests—including replacing core explanatory variables and re-estimating with random-effects models and fixed-effects models—the negative impact of financial technology on enterprises' short-term borrowing and long-term investment behaviors remains significant; Third, mechanism tests reveal that financial technology can further curb enterprises' short-term borrowing and long-term investment behaviors by easing financing constraints and elevating the level of financialization; Fourth, for enterprises in high-tech industries and those without major defects, the negative impact of financial technology on their short-term borrowing and long-term investment behaviors is distinctly pronounced, whereas this effect is not evident in non-high-tech industries and enterprises with major defects.

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