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Does Fintech-Driven Competition Reduce Bank Risk-Taking? Evidence from Emerging Markets

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ABSTRACT: This paper examines the relationship between bank fintech competition and bank risk-taking using data from 18 emerging-market countries from 2014 to 2023. Previous studies have looked at fintech adoption and bank competition, or at bank competitiveness and performance, but few have examined how bank fintech competition affects banks' risk-taking, especially in emerging countries, even though fintech matters a great deal to banking in these markets. The study applies a two-stage empirical model to panel data and build a fintech index, with financial inclusion as the proxy, using principal component analysis. The results show that fintech adoption, measured by financial inclusion, increases competition among banks, and that this competition is associated with less risk-taking. These findings are consistent with the competition-stability theory and point to a stabilizing role for fintech in banking, particularly in emerging markets where access to financial services is still limited. The study adds to the literature by identifying common trends, disparities, and factors that may influence banks' risk-taking under bank fintech competition.

KEYWORDS: Competition-stability hypothesis, Financial inclusion, Fintech adoption, Principal component analysis, Z-score

INTRODUCTION

Since the global financial crisis of 2007-2009, the banking sector has had to deal with low interest rates, deleveraging, slow credit growth, heavier regulatory and compliance requirements, and reputational damage. On top of these post-crisis pressures, banks now face digital disruption, as financial technology (fintech) firms and platform-based rivals compete harder for retail customers. The rapid spread of fintech has changed traditional banking models by making operations more efficient and widening access to financial services. In emerging markets in particular, fintech adoption is widely seen as a driver of bank competition, mainly through its role in promoting financial inclusion. Previous research has examined the links between fintech adoption and bank competition, and between bank competitiveness and performance, but few studies have looked at how bank fintech competition affects bank risk-taking, especially in emerging countries. This raises three questions. To what extent does fintech increase competition in the banking sectors of developing countries? How does bank fintech competition affect banks' risk-taking in emerging markets? And how do other factors shape the relationship between bank fintech competition and banks' risk-taking?

To address this gap, this study proposes a new two-stage approach. The first stage estimates the effect of fintech adoption, proxied by financial inclusion, on bank competition. The second stage estimates how the competition driven by fintech adoption affects bank risk-taking. I use panel data from 18 emerging countries over 2014-2023 and construct a fintech index with Principal Component Analysis (PCA) to capture variation in financial inclusion. The models also include bank-specific and country-level macroeconomic variables to make the findings more robust. Fintech adoption increases competition, which in turn reduces banks' incentive to take risks. This supports the competition-stability theory and adds new evidence on how fintech shapes risk behavior in emerging banking systems.

The rest of the paper is organized as follows. The next section reviews the literature and develops the hypotheses. The materials and methods section then describes the data sources, variables, and empirical method. The remaining sections report the results, discuss the findings and limitations, and conclude with policy implications.

LITERATURE REVIEW

Fintech adoption and bank competition

Technology-driven innovation in the financial industry, commonly called fintech, has grown quickly in recent years. The Financial Stability Board (2017) defines fintech as "technologically enabled innovation in financial services that could lead to new business models, applications, processes, or products, significantly impacting financial markets, institutions, and the provision of financial services". Fintech has changed the financial sector by making transactions more efficient, widening access to services, and lowering operating costs (Davradakis & Santos, 2019). It improves financial inclusion and broadens the range of services on offer, but it also changes the market structure of financial services and brings new risks.

The ***Innovation-Growth theory*** holds that technological progress improves bank performance through more diversified banking services (Berger, 2003; Merton, 1995), better risk sharing among banks (Allen & Gale, 1994), and more efficient resource allocation (Houston et al., 2010; Ross, 1976). Zhang and Li (2025) find that fintech adoption has strengthened banks' operational competitiveness and eased the competitive pressure

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between banks. Fintech lowers operating costs, makes services more efficient, and supports better risk management systems, which moves traditional banking models toward a more customer-oriented design. These changes raise banks' overall competitiveness (Momaya, 2019; Panchal & Krishnamoorthy, 2019; Wang et al., 2021). Financial institutions that adopt fintech proactively and strategically tend to perform better and keep a lasting competitive edge in today's market (Ahn & Kim, 2019). Fintech has therefore become part of business strategy in banking and finance, because inclusive, fintech-driven finance reduces information asymmetry and intensifies market competition (Banna et al., 2021; Ahamed & Mallick, 2019). Under the Innovation-Growth view, then, fintech increases bank competition by improving service, lowering entry barriers, and keeping pressure on banks to innovate.

In contrast, the ***Innovation-Fragility theory*** argues that financial innovation, by raising banks' capacity to bear risk, can lead to excessive credit expansion and financial instability (Brunnermeier, 2009). Zhang and Li (2025) identify three fragilities associated with fintech adoption. The first is the cost of keeping up with technology: banks must upgrade their systems often, and these upgrades can be hard to implement. Banks that fall behind may lose competitive ground and become less efficient and less profitable (Khan et al., 2023). The second is operational risk from growing dependence on complex systems, where a system failure or network outage can seriously disrupt banking operations (Buckley et al., 2019; Vives, 2019). Fintech can improve credit risk assessment through advanced algorithms and data analytics, but poor measurement can raise risk, leading to more non-performing loans (NPLs) and lower financial stability (Khan et al., 2023). The third is regulatory and compliance pressure, because fintech often develops faster than existing legal and regulatory systems, which creates compliance risk (Philippon, 2016). Banks adopting fintech may have to comply with new rules on technology and data security, and failing to comply can bring penalties that further weaken stability in the banking sector (Khan et al., 2023). These challenges can hurt banks' ability to compete, especially for smaller banks and late adopters, which may widen the innovation gap and intensify competition.

Both theories predict that fintech adoption intensifies bank competition, though through different mechanisms. The Innovation-Growth view sees fintech as a source of efficiency and competitiveness. The Innovation-Fragility view warns that the same force, if poorly managed, can make the financial system more vulnerable.

Bank competition and banks' risk-taking

The competition-fragility hypothesis

The competition-fragility view, often called the franchise value theory, has long been the dominant framework in the literature. First proposed by Marcus (1984), it links stronger competition in banking to weaker financial stability. Competition cuts banks' returns and erodes their franchise value, which gives them more reason to take on risk (Keeley, 1990; Allen & Gale, 2000; Hellmann et al., 2000). The result can be financial distress through higher credit risk or thin liquidity buffers, leaving banks more exposed to shocks. Franchise value is the expected value of a bank's future earnings. When it falls, banks have less to lose from failure and less reason to behave prudently, so they change their risk profile (Berger et al., 2008). They take more risk in search of higher returns, and portfolio quality suffers (Marcus, 1984; Keeley, 1990; Carletti & Hartmann, 2003). Keeley (1990) attributes a rise in US bank failures to deregulation and greater competition during the 1990s, which reduced banks' monopoly profits. In Spain, Jiménez et al. (2007) find that more competition was associated with riskier lending, reflected in higher non-performing loans. More competition can reduce the surplus banks earn from identifying high-quality borrowers, which weakens their incentive to screen and worsens asset quality (Chan et al., 1986). Allen and Gale (2000) model interbank contagion under perfect competition and show that even small liquidity shocks can destabilize the whole banking system, because banks that are price takers have no incentive to provide liquidity to struggling institutions. An extension of the same model shows that contagion is less likely in imperfectly competitive markets (Allen & Gale, 2004).

The competition-fragility view also draws on the "charter value" model of banking developed by Marcus (1984) and Keeley (1990), in which banks choose the risk level of their asset portfolios. Because of limited liability, bank owners share only in the upside of risk-taking, so they have an incentive to shift risk to depositors. When competition is strong and profits are squeezed, banks take on excessive risk and become more fragile. In markets with entry restrictions and little competition, banks earn more and hold stronger capital buffers, so they have less reason to take aggressive risks and the system is more stable. Competition also erodes the informational rents banks earn from borrower relationships, which weakens their incentive to screen borrowers and adds to fragility (Allen & Gale, 2000, 2004; Boot & Thakor, 1993). As competition narrows profit margins, banks turn to riskier investments to restore profits, as the competition-fragility view predicts (Berger et al., 2008).

The competition-stability hypothesis

The competition-stability view takes the opposite position: more competition makes banks more stable. Competitive pressure forces banks to operate efficiently and adopt stronger risk management. Boyd and De Nicolò (2005) show that in more competitive markets, lower lending rates reduce borrowing costs for entrepreneurs and lead to more productive investment. Their results point to a monotonically decreasing relationship between competition and bank risk, so more competition can lower credit risk and strengthen financial stability. Allen et al. (2011) show that in a more competitive credit market, discipline from the asset side of the balance sheet leads banks to hold capital above regulatory requirements as a commitment to monitor borrowers more closely, which raises borrowers' expected repayment and reduces credit risk. Banks in competitive markets are pushed to improve service quality and cut process costs to attract and keep customers. This can speed up technology adoption and improve customer service, which benefits both banks and their customers (Fiordelisi & Mare, 2014). Competitive pressure can lead banks to strengthen risk oversight to maintain high credit ratings and keep depositors' confidence. A competitive and diverse banking sector can reduce systemic vulnerability as well, because in a highly concentrated sector the failure of a single bank does more damage to the whole financial system (Mohd Noor et al., 2020). When competition in the deposit market increases and banks' market power declines, loan pricing becomes more favorable to borrowers. Lower interest rates ease borrowers' financial burden, so they have less need to take excessive risks to meet their repayments. Borrowers are less likely to default when financing costs are manageable, and lending outcomes become more stable.

Taken together, these theoretical and empirical studies suggest that greater bank competition can make the financial system more resilient and reduce excessive risk-taking.

Factors influencing bank risk-taking

The literature identifies both bank-specific and macroeconomic determinants of bank risk (Louzis et al., 2012; Poghosyan & Čihák, 2011; Baselga-

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Pascual et al., 2015; Vithessonthi, 2014). Louzis et al. (2012) find that non-performing loans (NPLs) in the Greek banking sector depend on loan type (consumer, business, or mortgage), the quality of bank management, and macroeconomic conditions such as GDP, the unemployment rate, and public debt. Son et al. (2016), using data from six Southeast Asian countries over 2005-2013, show that bank-specific factors such as asset structure, capitalization, and size reduce risk-taking, while inflation and GDP increase it. Bongiovanni et al. (2021) also find that inflation increases banks' risk-taking. More recent studies document the adverse effect of COVID-19 on bank stability and risk, as rising unemployment and falling GDP pushed up credit risk (Colak & Öztekin, 2021). This literature concludes that banks' incentive to take risks was negatively correlated with COVID-19. Chen et al. (2015) use cross-country data on more than 1,200 banks and find that corruption significantly raises bank risk-taking, which supports the "sand the wheel" view in the corruption-development literature.

Research gaps

The studies reviewed above leave a gap. Several examine the relationship between competition and risk-taking in banking (Boyd & De Nicolò, 2005; Allen et al., 2011; Mohd Noor et al., 2020; Soedarmono et al., 2013; Jiménez et al., 2007; Bakhouche, 2024). Others study the effect of fintech adoption on bank competitiveness (Dwivedi et al., 2021; Zveryakov et al., 2019; Zhang & Li, 2025) or, separately, on bank risk-taking (Elekdag et al., 2025). Some look at how financial inclusion relates to market competition or bank performance (Pham et al., 2019; Marín & Schwabe, 2019; Song et al., 2024). Few studies, however, examine fintech, competition, and risk-taking in banking together. To my knowledge, there is little evidence on how bank fintech competition affects bank risk-taking, especially in emerging countries. This study addresses that gap. It applies a two-stage empirical model to panel data from emerging markets over 2014-2023 to test how bank fintech competition, meaning competition driven by fintech adoption, relates to banks' risk-taking. It also builds a fintech index, with financial inclusion as the proxy, using principal component analysis.

Research hypothesis

Based on the theoretical framework above, I test the following hypotheses:

H1: Fintech adoption increases competition in the banking sector.

H2: Increased bank competition reduces banks' risk-taking (consistent with the competition-stability view).

MATERIALS AND METHODS

Data

I build an unbalanced annual panel of country-level data for 18 emerging-market countries over 2014-2023. Drawing on theory and previous research, I propose a model with 10 factors expected to affect the risk incentives of the banking system. These measures are common in related empirical studies (Boyd & De Nicolò, 2005; Elekdag et al., 2025; Son et al., 2016; Louri & Karadima, 2019).

(1) Dependent variable

Following earlier studies of competition and bank risk-taking (Beck et al., 2013; Boyd & De Nicolò, 2005; Deng et al., 2021; Elekdag et al., 2025; Schaeck & Čihák, 2014), I measure bank risk-taking with the Z-score. The Z-score is a standard measure of the stability of financial institutions. Empirical banking studies use it widely to gauge the likelihood of bank failure or distress, since it combines profitability, capitalization, and earnings volatility (Elekdag et al., 2025). The Z-score is usually computed as return on assets plus the equity-to-assets ratio, divided by the standard deviation of return on assets. Instead of computing it myself, I use the Z-score published by the World Bank, which captures the probability of default of a country's banking system. A higher Z-score means a more stable banking system with less incentive to take risks (Elekdag et al., 2025).

(2) Independent variables

The two independent variables, FI and hhi, correspond to the two stages of the approach.

The first stage examines how fintech adoption affects bank competition. I use financial inclusion (FI) as a proxy for fintech adoption in the banking sector, since financial inclusion reflects the use of financial technology innovations. Financial inclusion refers to the accessibility and affordability of financial services for all segments of society, especially groups traditionally excluded from the formal banking system (Ozili, 2021). Fintech has been a major driver of financial inclusion, defined here as affordable access to basic financial products and services. I construct the FI index with Principal Component Analysis (PCA) from three indicators: the number of ATMs per 100,000 adults, the number of ATMs per 1,000 km², and the number of mobile money agents and non-branch commercial bank agent outlets per 100,000 adults. These indicators capture the accessibility and reach of digital financial infrastructure. I normalize them and combine them into a single composite index, FI, which reflects the level of digital financial access enabled by fintech adoption.

The second stage examines how changes in bank competition driven by fintech adoption affect bank risk-taking. Following Djalilov and Piesse (2016), Sinha and Sharma (2016), and Yao et al. (2018), I measure bank competition with the Herfindahl-Hirschman Index (HHI), a traditional and widely accepted indicator of market concentration and competition in banking. I compute market shares from bank total assets and treat each country as one market. A higher HHI means greater concentration and less competition, and a lower HHI means a more competitive market (Poshakwale & Qian, 2011).

(3) Control variables

Country-level macroeconomic and structural data come from public sources: the Global Financial Development Database, the World Development Indicators, the World Bank, and the World Bank Governance Indicators. They include non-performing loans, the bank capital-to-assets ratio, GDP per capita, inflation, the unemployment rate (unemployrate), and government effectiveness. The World Pandemic Uncertainty Index is taken from World Pandemic Uncertainty, and corruption data come from the Corruption Perceptions Index.

Empirical model

I use a two-stage approach, based on linear regression with panel data estimators, to study the relationship between bank fintech competition and bank risk-taking. The research model is estimated with pooled OLS. The first stage examines how fintech adoption affects bank competition. The model is given in Equation 1:

$$\boldsymbol{hhi_{i,t} = \alpha + \beta\, FI_{i,t} + \gamma\, macro_{i,t} + \delta\, bankspecific_{i,t} + \varepsilon_{i,t}} \quad \textbf{(1)}$$

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where $hhi_{i,t}$ is the level of bank competition in country i in year t; $FI_{i,t}$ is the PCA-based financial inclusion index of country i in year t; $macro_{i,t}$ denotes the macroeconomic factors of country i in year t; $bankspecific_{i,t}$ denotes the bank-specific factors of country i in year t; β, γ, δ are the coefficients, and $\varepsilon_{i,t}$ is the error term.

The second stage examines how the increase in bank competition driven by fintech adoption affects bank risk-taking. The model is:

$$\boldsymbol{zscore_{i,t} = \alpha + \beta\, hhi_hat_{i,t} + \gamma\, macro_{i,t} + \delta\, bankspecific_{i,t} + \varepsilon_{i,t}} \quad \textbf{(2)}$$

where $zscore_{i,t}$ is the risk-taking proxy for the banking system of country i in year t; $hhi_hat_{i,t}$ is the fitted value of $hhi_{i,t}$ from Equation (1), that is, the bank competition driven by FI in country i in year t; $macro_{i,t}$ denotes the macroeconomic factors of country i in year t; $bankspecific_{i,t}$ denotes the bank-specific factors of country i in year t; β, γ, δ are the coefficients, and $\varepsilon_{i,t}$ is the error term.

Because the observations vary across both countries and years (panel data), I estimate model (2) with pooled OLS, a Fixed Effects Model (FEM), and a Random Effects Model (REM). Pooled OLS treats all coefficients as constant across countries and years. FEM drops variables whose values do not change over time, and REM assumes that the explanatory variables are uncorrelated with the error term. To choose among them, I run diagnostic tests in sequence: the Hausman test to choose between FEM and REM, the Breusch-Pagan Lagrangian multiplier test to check whether random effects are needed over pooled OLS and to test for heteroscedasticity, and the Wooldridge test for autocorrelation. If the selected model shows heteroscedasticity, autocorrelation, or both, robust estimation is applied to correct these problems and obtain robust, unbiased estimates of the relationship between bank fintech competition and bank risk-taking.

RESULTS

Descriptive statistics

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. dev	Min	Max
zscore	143	15.364	6.576	4.320	26.545
FI	144	-4.53e-09	1.000003	-1.2	2.529
hhi	143	1015.531	451.663	73.732	2000
gdppercap	180	11489.84	10108.83	1553.884	53708.17
inflation	179	5.358	7.840	-2.093	72.309
unemployrate	168	7.224	6.425	.576	34.007
wpui	144	3.714	6.309	.0179	17.229
corruption	144	44.271	11.457	28	73
goveffect	180	59.183	15.348	24	95.283
npl	153	3.247	2.111	1.08	15.622
bcaptoasset	153	9.602	2.109	6.299	15.416

Source: Stata processing results

Table 1 reports descriptive statistics for all variables. The variables are stable, none shows abnormal values, and they are reasonably consistent with one another, which suggests that the sample is representative and suitable for the research objectives.

Linear regression analysis

The first stage of the approach examines how fintech adoption affects bank competition. Table 2 reports the linear regression results for Equation (1), as specified in the Empirical model subsection.

Table 2. Linear regression results (1)

hhi	Coef.	Std. err	t	P > | t |	[95% Conf. Interval]		Sig
FI	-115.4824	35.11731	-3.29	0.001	-185.03	-45.934	**
gdppercap	-.0085364	.0052961	-1.61	0.110	-.01902	.00195	
inflation	-31.83123	9.075058	-3.51	0.001	-49.804	-13.859	**
unemployrate	35.48499	5.349505	6.63	0.000	24.8906	46.0794	***

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corruption	-2.256236	4.779109	-0.47	0.638	-11.721	7.20854	
goveffect	-12.7587	3.388464	-3.18	0.002	-17.469	-4.0480	**
npl	-9.698408	13.46587	- 0.72	0.473	-36.358	16.979	
bcaptoasset	-7.475798	15.59706	-0.48	0.633	-38.365	23.413	
cons	1161.788	279.8074	4.15	0.000	607.644	1715.93	
R-squared = 0.6271; Prob>F = 0.0000							

Note: * p<0.05, ** p<0.01, *** p<0.001

Source: Stata processing results

The R-squared of 0.6271 means that the independent variables explain about 62.71% of the variation in the dependent variable. The remaining 37.29% comes from factors outside the model and random error, but the model still explains a large share of the variation. The coefficient of *FI* is -115.482 and strongly significant, which shows that fintech adoption, measured through financial inclusion, can increase competition in the banking systems of emerging markets (lower *hhi*). The positive coefficient on *unemployrate* suggests that higher unemployment leads to greater market concentration. The coefficient on *inflation* is negative and statistically significant, so higher inflation is associated with more bank competition. Higher inflation often brings tighter monetary conditions and a more volatile economy, and banks may respond with more aggressive market strategies and better terms to keep and attract customers, which intensifies competition. *goveffect* is strongly significant as well (p-value < 0.05). More effective government increases bank competition, because it improves the business environment and makes it possible for more financial institutions to operate.

The first-stage results show that ***fintech adoption has increased bank competition***, since the coefficient of *FI* on *hhi* is negative. This is consistent with hypothesis H1 in the Research hypothesis subsection.

Regression analysis of OLS, FEM, REM

Table 3. Regression results of OLS, FEM, REM

	zscore OLS	**zscore FEM**	**zscore REM**
cons	26.64*** (3.64)	39.82*** (4.70)	35.73*** (4.01)
hhi_hat	0.0182*** (3.57)	-0.0264*** (-4.50)	-0.0221*** (-3.65)
gdppercap	0.000851*** (9.28)	-0.000146 (-1.40)	-0.0000720 (-0.77)
inflation	0.251 (1.08)	-0.885*** (-4.27)	-0.747*** (-3.86)
unemployrate	-0.781** (-3.28)	0.973*** (4.26)	-0.781** (-3.43)
wpui	-0.00658 (-0.10)	-0.0352* (-2.12)	-0.0359 (-2.13)
corruption	-0.292*** (-3.57)	-0.0792 (-1.51)	-0.0832 (-1.72)
goveffect	0.340*** (3.54)	-0.273*** (-4.07)	0.231*** (3.27)
npl	-0.471 (-1.92)	-0.398*** (-3.52)	-0.359*** (-3.27)
bcaptoasset	-1.236 (-4.72)	0.242 (1.56)	0.286 (1.88)
Number of obs	127	127	127
R-squared	0.5238	0.3963	0.3921

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Breusch–Pagan test results	*P – value = 0.0000 < 0.05*	
Hausman test results	*P – value = 0.8663 > 0.05*	
Wooldridge test results	*P – value = 0.0655 > 0.05*	
Prob > F = 0.0000		Prob > Chi2 =0.0000
*Note: * p<0.05, ** p<0.01, *** p<0.001* *t statistics in parentheses*		

Source: Stata processing results

The Hausman test (p-value > 0.05) indicates no correlation between the explanatory variables and the random effects, so REM is more appropriate and reliable than FEM. The Wooldridge test (p-value > 0.05) finds no autocorrelation. I therefore use REM to evaluate how the increase in bank competition driven by *FI* affects banks' risk-taking, since it gives more efficient estimates while allowing for random variation across countries.

In the REM estimates, five variables are significantly related to stability: *hhi_hat*, *inflation*, *unemployrate*, *goveffect*, and *npl*. The coefficient of *hhi_hat* on *zscore* is negative. When bank fintech competition increases (lower *hhi*), the Z-score rises, meaning that banking systems in emerging countries become stronger and have less incentive to take risks. The coefficient on *inflation* is negative, which suggests that higher inflation may raise financing costs and weaken borrowers' ability to repay, increasing banks' credit risk. Unemployment (*unemployrate*) also has a negative effect on *zscore*, consistent with the idea that higher unemployment reflects weaker economic conditions and leads banks to take more risk. The negative coefficient of *npl* indicates that higher credit risk is associated with lower bank stability. High levels of non-performing loans usually reduce banks' profitability and capital adequacy and leave them more exposed to insolvency. Government effectiveness (*goveffect*) has a positive effect on stability, which suggests that better institutional quality and policy implementation support a more stable banking environment.

The regression analysis, correlation tests, and assumption checks indicate that the model is appropriate and that its limitations have been addressed. Of the explanatory variables, *hhi_hat*, *inflation*, *unemployrate*, *goveffect*, and *npl* have a significant effect on the dependent variable, while the others are not statistically significant.

DISCUSSION

This study examines how bank fintech competition affects banks' risk-taking in emerging markets, using annual data for 2014-2023 and a two-stage approach. The first stage tests whether fintech adoption increases bank competition. The results show that fintech adoption, measured by financial inclusion, intensifies competition across the banking sector. This is the main finding of the paper, and it is in line with previous studies (Pham et al., 2019; Dwivedi et al., 2021; Zveryakov et al., 2019; Zhang & Li, 2025). The second stage examines how the increase in competition driven by *FI* affects banks' risk-taking. This result is robust: as bank fintech competition increases, banks' incentive to take risks falls and banking systems across emerging countries become stronger. The findings support the competition-stability theory, which holds that more competition encourages prudent risk management and strengthens the financial system (Boyd & De Nicolò, 2005; Allen et al., 2011; Mohd Noor et al., 2020; Soedarmono et al., 2013). Among the control variables, *inflation*, *unemployrate*, *goveffect*, and *npl* are significantly related to bank risk-taking as measured by *zscore*. Government effectiveness is positively associated with the Z-score, while higher non-performing loans, inflation, and unemployment are all negatively associated with it and so add to bank fragility. Through fintech adoption, higher financial inclusion brings more competition into the banking system, which in turn makes banks more stable and less inclined to take risks.

The study has several limitations. The sample covers only emerging countries, so the results cannot be generalized globally. The data are at the country level, and the regulatory, technological, and economic conditions specific to each emerging market may not carry over to more developed financial systems. Finally, I did not examine how competition affects other bank performance indicators such as efficiency and profitability. Future research could take up these issues. Cross-country comparisons could show how differences in banking structure and financial inclusion affect stability and risk. Studying regulatory quality across countries may clarify how policy environments shape bank behavior. Bank-level data would allow a closer analysis of how fintech-driven competition affects individual banks' risk-taking decisions in developing economies.

CONCLUSION

Beyond adding to the literature, the findings have several economic and policy implications. First, regulators in emerging countries should strengthen fintech oversight while keeping the banking sector competitive. They should give more attention to technical and banking infrastructure, invest in fintech-related research, and make sure that regulatory frameworks keep pace with technological change. Second, policymakers should take steps to limit job displacement caused by technological innovation, for example through retraining and upskilling programs that help workers adapt to a changing labor market and so support inclusive finance. Third, banks should adopt fintech strategically to improve service delivery and competitiveness while maintaining their risk standards. Fintech adoption should go hand in hand with strong risk governance, so that banks do not gain competitiveness at the expense of financial stability.

ETHICAL AND COMPLIANCE STATEMENTS

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