The Influence of Fintech P2P Lending on Islamic Bank Financing

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ABSTRACT

The rise of financial technology (fintech) has disrupted traditional banking systems, introducing both challenges and opportunities. While fintech financing has resulted in a substitution effect that diminishes banking value, it also complements the banking sector by leveraging technology to improve financial services. This study investigates the impact of fintech peer-to-peer (P2P) on Islamic banking financing and examines the role of financial inclusion in moderating this relationship. Using panel data regression across Indonesian regions from 2021 to 2023 with a fixed-effects model, the findings reveal that fintech P2P lending, bank assets, and bank deposits positively and significantly influence Islamic bank financing. However, financial inclusion and its interaction with fintech P2P lending exhibit a negative and significant effect, suggesting that an increase in Islamic bank branches, as a proxy of financial inclusion, reduces Islamic bank financing and weakens the link between fintech P2P lending and Islamic bank financing. These results highlight the need for an innovative approach to financial inclusion, such as enhancing digital financial services, while urging practitioners and regulators to align fintech adoption with inclusive financial strategies to optimize its impact.

Keywords: *Fintech P2P lending, Islamic bank financing, financial inclusion, Islamic bank asset, Islamic bank deposit.*

INTRODUCTION

The rapid advancement of financial technology (fintech) has significantly reshaped the global financial landscape, introducing new products, services, processes, and organizational structures (Frame & White,

IQTISHADIA
Vol. 18 (1) 2025
PP. 133-148
P-ISSN: 1979 - 0724
E-ISSN: 2502 - 3993
DOI : 10.21043/iqtishadia.v18i1.31352

2004; Lee et al., 2021). In Indonesia, this transformation is fueled by the widespread adoption of digital technologies, with internet users reaching approximately 212 million as of January 2023 (KOMINFO, 2023). Among the fintech innovations gaining traction is peer-to-peer (P2P) lending, which has emerged as a prominent alternative financing mechanism outside the traditional banking system.

The growth of fintech P2P lending presents both opportunities and challenges for the banking sector. On the one hand, it complements existing financial institutions by enhancing access to finance, particularly for underserved and unbanked populations (Milne & Parboteeah, 2016; Navaretti et al., 2017). On the other hand, it introduces a substitution effect, intensifying competition with banks through more efficient, accessible, and cost-effective lending services (De Roure et al., 2022; Philippon, 2016). Some studies argue that rather than merely replacing traditional banking, fintech expands overall credit supply and drives innovation across the financial sector (Chen et al., 2022).

Empirical research provides mixed evidence on the impact of fintech on banking performance. For instance, Jagtiani and Lemieux (2018) found that fintech firms like Lending Club expanded access to credit in underserved markets, thereby pressuring traditional banks to innovate. Katsiampa et al. (2022) reported that fintech startups in China adversely affected banks' financial and prudential performance, particularly in payment services. Meanwhile, Akhtar and Nosheen (2022) found that fintech positively influences banks' operational performance, liquidity, and leverage, though potentially harming long-term market performance. Dasilas and Karanović (2023) further highlighted the potential of fintech to improve banks' interest margins and profitability.

In the context of Islamic banking, financial technology (fintech) introduces distinct implications due to the sector's adherence to sharia-compliant financial principles. Financial inclusion, a key policy objective aimed at expanding access to financial services, plays a critical role in shaping the growth and reach of Islamic banking. Traditional approaches to financial inclusion - such as increasing the number of physical bank branches- can enhance outreach, particularly in rural and underserved regions (Allen et al., 2016). However, in dual banking systems, this strategy may unintentionally favor conventional banking services and reduce the uptake of Islamic financial products (Kayed & Hassan, 2011). Fintech, particularly peer-to-peer (P2P) lending platforms, presents a viable alternative by offering sharia-compliant

financing solutions that directly address accessibility gaps and align with Islamic financial ethics (Ozili, 2018). While digital financial services are gaining prominence, financial inclusion is still commonly measured using the number of bank branches per capita or geographic area. This proxy is grounded in the theory that physical proximity to banking institutions significantly influences the likelihood of individuals engaging with the formal financial system (Beck et al., 2007). The presence of bank branches reduces informational and transactional barriers, lowers costs, and builds trust, particularly in contexts with limited digital infrastructure. Thus, branch density remains a practical and observable indicator of financial inclusion, especially in regions where digital adoption remains uneven.

However, the interaction between fintech and financial inclusion remains complex. While fintech can enhance financial access, its effectiveness may be hindered if inclusion strategies remain anchored in traditional infrastructure rather than digital innovation. In such contexts, expanding bank branches may reduce the demand for fintech services and weaken their positive contribution to Islamic bank financing.

This study aims to examine the impact of fintech P2P lending on Islamic bank financing in Indonesia and explore the moderating role of financial inclusion in this relationship. By focusing on the interplay between fintech innovations and Islamic financial institutions, the research contributes to a deeper understanding of how digital financial services influence sharia-compliant credit provision. The findings are expected to offer practical insights for policymakers and financial practitioners seeking to foster an inclusive and balanced financial ecosystem that harmonizes technological advancement with Islamic banking principles.

LITERATURE REVIEW

Fintech P2P lending and Islamic bank financing

The rapid advancement of financial technology (fintech) has transformed the financial services landscape, reshaping traditional banking models and operations (Lee et al., 2021; Barberis & Chishti, 2016). Technology firms increasingly collaborate with commercial banks, leveraging innovations such as mobile platforms, big data, and artificial intelligence to enhance service efficiency and competitiveness (Wang et al., 2021; Bomer dan Maxin, 2019; Meinert, 2017). These developments are aligned with the technology spillover theory, which posits that innovations in one firm or sector can

diffuse to others, leading to improved productivity, service optimization, and risk mitigation across the industry (Wang et al., 2021).

In the context of Islamic banking, fintech represents both a challenge and an opportunity. It offers a pathway to expand sharia-compliant financing solutions while addressing growing demands for innovation and inclusivity. Fintech's influence on banks is generally categorized into substitution effects—where fintech directly competes with traditional banks—and complementary effects, in which banks partner with fintech providers to improve their product and service offerings (Narayan, 2019; Li et al., 2017). Empirical evidence from U.S. banks suggests that fintech funding complements rather than replaces traditional banking, contributing positively to bank performance and access to financial services.

For Islamic financial institutions (IFIs), P2P lending platforms present a promising model to deliver sharia-compliant financing, particularly in underserved markets. These platforms can support financial inclusion while maintaining adherence to Islamic principles. Based on this, the hypothesis is formulated as follows:

Hypothesis 1 (H1): Fintech P2P lending positively impacts Islamic bank financing.

Internal factors and Islamic bank financing

Asset size is a critical internal factor influencing a bank's capacity to provide financing. In Islamic banking, financing instruments such as *murabaha*, *ijarah*, and *mudarabah* are predominantly asset-based or asset-backed, reflecting the prohibition of interest (*riba*) and emphasizing real economic activity. Studies have demonstrated a strong positive relationship between Islamic banks' asset growth and financing capabilities (Kishan & Opiela, 2000; Rama & Kassim, 2013; Warninda et al., 2019). A larger asset base enables banks to diversify their financing products and manage risks more effectively, supporting equitable and sustainable economic development in line with sharia objectives.

Additionally, Sari and Annisa (2023) argue that well-managed asset growth leads to increased profitability and a stronger ability to serve diverse customer needs. By expanding assets, Islamic banks can enhance resilience and strategically allocate resources toward sectors aligned with ethical and socially responsible principles. Thus, the hypothesis is proposed:

Hypothesis 2 (H2): Islamic bank assets positively impact Islamic bank financing.

Deposits, particularly Third-Party Funds (TPF), serve as the primary source of liquidity for Islamic banks and are instrumental in supporting profit-sharing financing schemes such as mudharabah and musharakah. Larger deposits provide Islamic banks the financial flexibility to extend financing and fulfil their intermediary function between savers and entrepreneurs. Prior research underscores the positive effect of deposit growth on the volume and scope of financing activities (Al-Qudah & Jaradat, 2013; Permataningayu & Mahdaria, 2019).

Furthermore, effective deposit mobilization ensures financial stability, enhances the bank's operational capacity, and supports financial inclusion and socio-economic development goals. Conversely, inadequate deposits can limit financing and weaken the bank's contribution to economic empowerment (Chinoda & Kwenda, 2019; Mishra et al., 2024). Deposits are not merely a measure of a bank's liquidity but a critical determinant of its capacity to provide financing and maintain financial sustainability (Musri & Rama, 2015). Therefore, the following hypothesis is proposed:

Hypothesis 3 (H3): The size of bank deposits positively impacts Islamic bank financing.

Fintech mitigates information asymmetry, enabling efficient credit allocation (Lyu et al., 2023; Narayan, 2019). P2P lending platforms broaden access to financing, particularly for unbanked populations, while digital tools enhance financial literacy and trust in Islamic finance (Narayan, 2019; Pambudianti et al., 2020). However, the interaction between fintech and financial inclusion is nuanced. While fintech can expand Islamic banks' reach, traditional inclusion strategies (e.g., branch expansion) may dilute focus on digital adoption. Empirical evidence suggests fintech-driven inclusion improves accessibility but may weaken if physical infrastructure overshadows digital integration (Asif et al., 2023; Goswami et al., 2022). Hence, the following proposed hypothesis is:

Hypothesis 4 (H4): Financial inclusion strengthens the relationship between fintech P2P lending and Islamic bank financing.

RESEARCH METHOD

Data and source

This study ustilizes a balanced panel dataset comprising monthly data from 33 provinces in Indonesia from January 2021 to December 2023. The data was obtained from the Financial Services Authority, which regularly publishes detailed statistical reports on the national financial sector. The dataset includes key variables such as fintech P2P lending (X_1), Islamic banking assets (X_2), Islamic bank deposits (X_3), the number of bank branches representing financial inclusion (X_4), and Islamic bank financing as the dependent variable (Y). By leveraging this extensive dataset, the study explores the intricate relationships between financial technology, bank deposits, financial inclusion, and Islamic bank financing, providing insights into how fintech innovations and financial inclusion impact the growth and sustainability of Islamic banking in Indonesia.

Model specification

The hypothesis testing in this study utilizes panel data regression analysis, with the following basic equation model:

$$Y_{it} = \beta o_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 (X_5 . X_{1it}) + \epsilon\epsilon_{it} \quad (1)$$

z Y_{it} represents Islamic bank financing for the *i-th* observation unit at time *t*. The explanatory variables X_{1it} through X_{4it} denote fintech P2P lending, Islamic bank assets, Islamic bank deposits, and financial inclusion, respectively. The term $X_5 . X_{1it}$ captures the interaction effect between financial inclusion and fintech P2P lending. $\epsilon\epsilon_{it}$ denotes the error term, and β_o through β_5 are the model parameters to be estimated.

The analysis involves panel estimation methods (Common, Fixed, and Random Effects), model selection through the Chow and Hausman Tests, and hypothesis testing via F-tests, t-tests, and R^2. Panel regression inherently minimizes errors, enhances variable diversity, and increases efficiency by avoiding classical assumption tests, making it a robust method for evaluating dynamic relationships in Islamic bank financing (Basuki & Prawoto, 2016; Gujarati, 2006).

RESULTS

Table 1 presents the estimation results for the common, fixed, and random effect regression models. The common effect model, which combines

time series and cross-sectional data, assumes homogeneity across individuals and over time. However, this model is limited as it overlooks variations between individuals and temporal dynamics, failing to capture the true heterogeneity in the data. The fixed effect model, employing the Least Squares Dummy Variable (LSDV) approach, accounts for individual differences by allowing unique intercepts for each subject, reflecting the distinct characteristics of the entities being studied. While effective in controlling for unobserved heterogeneity, it assumes that these intercepts remain stable over time and that the slopes of explanatory variables are consistent across both entities and periods. The random effect model, in contrast, incorporates random variations by assuming that the error terms are not entirely independent but may exhibit correlations across individuals and time. This approach is particularly useful when analyzing data with random variability, providing efficient estimates while accommodating the broader structure of the dataset.

Table 1 *Estimation results*

Variables	**Common**	**Fixed**	**Random**
Fintech P2P lending (X_1)	-0.732713***	2.56413***	1.748087***
	(0.254845)	(0.611950)	(0.446421)
Islamic bank asset (X_2)	0.085583***	0.232159***	0.081552***
	(0.012011)	(0.021098)	(0.012871)
Islamic bank deposit (X_3)	0.400414***	0.234093***	0.435449***
	(0.027347)	(0.040025)	(0.027609)
Financial inclusion x fintech (X_4)	0.004209***	-0.012258***	-0.005657***
	(0.000902)	(0.002888)	(0.001914)
Contant	471.1339	2395.186	321.22
	(75.54661)	(385.9690)	(223.6236)
Obs.	1188	1188	1188
Adj. R-squared	0.989011	0.993125	0.908493
F-statistic	21366.04	4635.18	2357.937
Prob(F-statistic)	0.00000	0.00000	0.00000
Durbin-Watson stat	0.137339	0.337803	0.202157

Source: Processed Data, 2025

Several statistical tests are performed sequentially to determine the best model among the common, fixed, and random effects. First, the Chow Test compares the common effect and fixed effect models. If the p-value of the cross-section *F* statistic is less than 0.05, the fixed effect model is preferred. If not, the common effect model is retained. Next, if the fixed

effect model is selected, the Hausman Test compares it with the random effect model. A p-value less than 0.05 indicates that the fixed effect model is more appropriate, suggesting significant correlations between the individual effects and the explanatory variables. Conversely, a p-value greater than 0.05 supports the random effect model.

Table 2 *Chow Test*

Effects Test	Statistic	d.f	Prob
Cross-section F	23.105088	(32,1150)	0.0000
Cross-section Chi-square	589.815493	32	0.0000

Source: Processed Data, 2025

The Chow test, as presented in Table 2, indicates that the cross-section chi-square probability value is 0.00, below the 0.05 threshold at the 5% significance level. This result suggests that the null hypothesis, which posits that the common effect model is appropriate, should be rejected in favor of the alternative hypothesis supporting the fixed effect model. Consequently, the fixed effect model is deemed more suitable for this analysis, as it accounts for individual heterogeneity across cross-sectional units, providing a more accurate representation of the data.

Table 3 *Hausman Test*

Test Summary	Chi-Sq Statistic	Chi-Sq. d.f.	Prob
Cross-section Random	139.508528	5	0.0000

Source: Processed Data, 2025

Table 3 presents the results of the Hausman test, revealing a cross-section random probability value of 0.00, below the 0.05 threshold at the 5% significance level. This outcome indicates a significant difference between the fixed and random effects models, suggesting that the random effects estimator is inconsistent. Consequently, the fixed effects model is deemed

more appropriate for this analysis, as it accounts for potential correlations between the individual effects and the explanatory variables, thereby providing more reliable and consistent estimates.

The panel data regression equation for the selected fixed effects model, as summarized in Table 1, is as follows:

$$Y= 2395{,}186 + 2{,}564130\ X_1 + 0{,}232159\ X_2 + 0{,}234093\ X_3 - 0{,}012258\ X_4.X_1$$

In this equation, *Y* represents the dependent variable, Islamic bank financing, while X1 denotes the independent variables to X_4. The constant term of 2395.186 reflects the baseline level of Islamic bank financing when all independent variables are zero.

DISCUSSION

Firstly, fintech P2P lending (X_1) shows a positive and statistically significant relationship with Islamic bank financing, with a coefficient of 2.56413 indicating that a 1-unit increase in fintech P2P lending corresponds to a 2.56413 increase in Islamic bank financing, holding other variables constant. This suggests that the growth of fintech platforms, particularly peer-to-peer lending services, enhances financial access and fosters a more integrated financial ecosystem, thereby driving demand for Islamic financing. As fintech services expand, they encourage individuals and businesses to explore complementary traditional banking products, ultimately broadening the market for such services. This finding supports Hypothesis 1 (*H1*) and aligns with prior research by Lee et al. (2021), highlighting that fintech innovations improve banks' cost efficiency and technological adoption. Kalai and Toukabri (2024) similarly found that in the United States, the complementary effect of fintech on bank value outweighs its substitution effect, as banks leverage fintech to transform their business models through technology, innovation, and service optimization. Over time, these advancements enhance the stability of the banking industry (Wang et al., 2021).

Secondly, Islamic bank assets (X2) have a positive and statistically significant effect on Islamic bank financing, with a coefficient of 0.232159 indicating that for every unit increase in assets, Islamic bank financing rises by 0.232159 units. This highlights the critical role of assets in Islamic banking, as a larger asset base enhances the bank's capacity to extend financing. Since Islamic banks rely on asset-backed financing in adherence to their

principles of avoiding speculation and ensuring tangible economic activity, a strong asset base allows them to provide more financing, thereby supporting economic growth and financial stability. This finding supports Hypothesis 2 (*H2*) and aligns with previous research, such as Sari and Annisa (2023), who found that asset growth in banks is driven by their ability to generate profits through public financing and innovative financing products. Furthermore, asset growth signals financial strength, attracting more depositors and investors, further enhancing the bank's financing capacity.

Thirdly, Islamic bank deposit (X_3) has a positive and significant impact on Islamic bank financing, with a coefficient of 0.234093 indicating that a 1-unit increase in deposits results in a 0.234093 increase in financing. Deposits are a vital source of funds for Islamic banks, forming the financial foundation for their financing activities. Increased deposits enhance liquidity, enabling banks to expand their financing options to businesses and individuals. This finding supports Hypothesis 3 (*H3*) and aligns with prior research, such as Salman (2022), finding that deposit funds (DPK) significantly and positively affect profit-sharing financing. This relationship arises because higher deposit volumes enable banks to broaden their financing portfolios, thereby supporting economic activities.

Finally, the interaction term between fintech P2P lending and financial inclusion (X4) yields a negative and statistically significant coefficient of -0.012258, indicating that their combined effect slightly reduces Islamic bank financing. This finding suggests that although financial inclusion generally broadens access to financial services, its intersection with fintech platforms may lead to a decline in reliance on traditional Islamic bank financing. As fintech solutions—such as P2P lending and digital credit—become more accessible, they offer alternative financing channels that can substitute conventional banking products. Consequently, as financial inclusion improves through digital innovation, especially in underserved areas, households and businesses may increasingly prefer the speed, convenience, and flexibility of fintech platforms over traditional Islamic banking. This result does not support Hypothesis 4 (H4).

Previous studies highlight how fintech contributes to financial inclusion by enhancing credit assessment and expanding access for the unbanked (Endiana & Merawati, 2022; Pambudianti et al., 2020). However, in this case, such inclusion may divert demand away from Islamic banks rather than complement them. This could be due to several factors: *First*, fintech P2P lending platforms typically offer more lenient requirements, faster approval

processes, and greater accessibility, especially via mobile devices, compared to Islamic banks, which remain bound by stricter regulatory compliance and sharia governance frameworks. *Second*, many Islamic banks have yet to fully integrate digital innovations or adapt to user-friendly fintech models, which limits their competitiveness in an increasingly digital financial landscape. *Third*, users who gain access to fintech services as part of financial inclusion initiatives may not necessarily develop stronger ties with formal banking institutions, particularly if fintech options already meet their credit and transactional needs. These dynamics suggest that Islamic banks may risk being sidelined in the broader financial inclusion agenda driven by fintech innovation without strategic collaboration or digital transformation.

CONCLUSION

The findings highlight the dynamic interplay between fintech P2P lending, Islamic bank assets, Islamic bank deposits, and the mediating role of fintech in shaping Islamic bank financing. Fintech P2P lending exhibits a positive and significant relationship with Islamic bank financing, suggesting that the growth of fintech platforms complements Islamic banking by enhancing financial accessibility and creating a more integrated financial ecosystem. Islamic bank assets and deposits also play critical roles, as larger asset bases and higher deposit volumes directly contribute to increased financing capacity. These results underscore the importance of strengthening both traditional banking resources and innovative financial technologies to support economic growth and financial inclusion.

However, the interaction between fintech and financial inclusion reveals a negative and significant effect on Islamic bank financing, indicating that expanding fintech solutions may lead to reduced reliance on traditional Islamic banking. While fintech platforms improve access to credit, especially for unbanked populations, their rapid growth challenges Islamic banks to maintain their market share. This finding underscores the need for Islamic banks to adapt to the changing financial landscape by integrating digital technologies and offering competitive, customer-centric products that align with fintech-driven financial solutions.

From a practical standpoint, these results carry important implications for stakeholders. Policymakers and regulators should encourage collaboration between fintech and Islamic banks to create synergies that enhance financial inclusion while sustaining the growth of Islamic finance. Islamic banks

should invest in digital transformation strategies, leveraging fintech to improve operational efficiency, customer experience, and product innovation. Meanwhile, fintech firms can explore partnerships with Islamic banks to expand their customer base and offer tailored financial products that adhere to Islamic principles. Fintech and Islamic banking can thrive by fostering a collaborative environment, ensuring sustainable financial development that benefits businesses and individuals.

LIMITATION

While this study provides valuable insights into the relationship between fintech P2P lending, Islamic bank assets and deposits, and their collective role in shaping Islamic bank financing, it is not without limitations. The analysis focuses primarily on quantitative relationships, leaving less room to capture qualitative aspects such as customer behavior, cultural influences, or preferences toward digital services, which could further enrich the findings. In addition, the data is limited to a specific period and set of indicators, meaning that rapid changes in regulations, technological innovations, or global economic conditions may alter the dynamics observed here. The study also emphasizes aggregate-level data, which may overlook variations at the institutional level, where individual banks or fintech platforms might adopt different strategies with diverse outcomes. Moreover, the results are most relevant to the Indonesian context, where Islamic banking has unique regulatory frameworks and customer bases, and therefore may not be fully generalizable to other countries. Finally, while the findings highlight the potential for collaboration between fintech and Islamic banks, the research does not explore in depth which partnership models or digital business strategies would be most sustainable, leaving an avenue for future studies to address.

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