

FINTECH DEVELOPMENT AND COMMERCIAL BANKS

Oluwamuyiwa Ibukun Oni*

Pan Atlantic University, Nigeria

oluwamuyiwa.oni@pau.edu.ng

Abstract

The adoption of financial technology (fintech) by commercial banks has surged over the past decade, particularly in emerging markets, as institutions seek to enhance service delivery, reduce operational costs, and extend financial inclusion. This study synthesizes evidence from multiple regions—Africa, Asia, and the Gulf Cooperation Countries—on the impact of fintech on bank performance and efficiency. Findings reveal mixed results: while fintech initiatives such as mobile banking, internet banking, and cashless payment systems generally enhance banking access and operational efficiency, their influence on financial performance indicators like return on assets (ROA) and return on equity (ROE) varies significantly across contexts. In South Africa, mobile broadband subscriptions (MBS) showed limited correlation with profitability, except for banks that aggressively digitized operations. In Indonesia, fintech regulation had differential impacts across bank types, with regional banks experiencing more pronounced changes. In Malaysia and India, cashless payments and mobile banking were positively associated with bank efficiency and profitability. Conversely, studies from the Gulf and China highlight that increased fintech competition and investment costs can depress profitability, particularly in the short term. Overall, while fintech has broadly improved service delivery and customer reach, the associated costs and competitive pressures from neobanks and fintech firms may offset financial gains for traditional banks, especially those slow to adapt. The study underscores the need for strategic alignment between fintech investments and long-term financial goals to optimize returns.

Keywords: Bank Efficiency, Fintech Development, Africa, Asia and Gulf Cooperation Countries

1. INTRODUCTION

The adoption of financial technology (fintech) by commercial banks has surged over the past decade, particularly in emerging markets, as institutions seek to enhance service delivery, reduce operational costs, and extend financial inclusion. This study synthesizes evidence from multiple regions—Africa, Asia, and the Gulf Cooperation Countries—on the impact of fintech on bank performance and efficiency. Findings reveal mixed results: while fintech initiatives such as mobile banking, internet banking, and cashless payment systems generally enhance banking access and operational efficiency, their influence on financial performance indicators like return on assets (ROA) and return on equity (ROE) varies significantly across contexts.

2. FINTECH DEVELOPMENT TRENDS IN COMMERCIAL BANKS

Financial technology (fintech) use by commercial banks has increased considerably over the past decade, with limited studies showing its influence on financial performance and efficiency (Tshukudu, Mokatsanyane, Ferreira-Schenk, van Rensburg and Sgammini, 2022). Within Africa, the high cost of brick-and-mortar premises and setting up a wide branch network has become arduous, particularly in remote areas with a sparse population where banking might appear

unprofitable. This has promoted the use of channels such as mobile money, internet banking, and agency banking particularly in remote areas (EFInA 2021). Tshukudu et al. (2022) in their study of the top five banks in South Africa showed a relationship between their financial performance and mobile subscriptions used for internet banking. The banks had made an effort to improve telephone banking over the years in a bid to improve banking penetration, by investing in customer service centres. In the study, ROE and ROA signified the financial performance of the banks, while the effects of financial technology was captured by mobile broadband subscriptions (MBS) in South Africa. Trend analysis in the study showed a positive trend between the ROE of the banks and MBS; however, the correlation analysis showed a modest but negative correlation with MBS, with the exception of one bank, which the authors attributed to its faster adoption of technology. The regression analysis of the study showed that MBS had a significant effect on the profitability of only one of the five banks, with the other four showing little impact from MBS on their profitability, when profitability is measured by ROE. The bank that saw a positive impact on its profitability from MBS had made conscious efforts to digitise its branch operations. The studies also showed that MBS had a negative impact on the profitability of all five banks when profitability is measured by ROA. An increase in assets due to higher investments in technology and a much higher rate of profitability can be attributed to a lower ROA, and consequently a negative correlation.

Suryanto Muhyi, Kuirniati and Mustapha (2022) evaluated the impact of financial technology law on the performance of foreign, domestic, and state-owned banks in Indonesia, considering its implication on performance matrices such as capital adequacy ratio, loan-to-deposit ratio, net interest margins, return on assets, and non-performing loans ratios. While the study showed differences in net interest margins for state-owned banks before and after the introduction of the fintech regulation, other matrices such as capital adequacy ratio, loan-to-deposit ratio, return on assets, and non-performing loans ratio show no difference following the introduction of the law. The study also showed similar results for foreign-owned banks with no changes in capital adequacy ratio, loan-to-deposit ratio, net interest margins, return on assets, and non-performing loans ratio. The variation appears to be in net interest margins where there is a difference for state-owned banks. For domestic regional banks, however, the study showed differences in capital adequacy ratio, loan-to-deposit ratio, net interest margins and return on assets post the introduction of the policy. Beyond the key financial ratios evaluated in the study, the study considers the level of intermediation in Indonesia following the introduction of the policy. The results show a reduction in the loan-to-deposit ratio, a proxy for intermediation in the study, when compared to the period before the introduction of the policy. The proliferation of fintech players in peer-to-peer lending and the ability to crowdfund to address financing needs since the introduction of the policy has increased competition for the banking sector. The study showed a broad, albeit marginal, decline in net interest margins and return on assets for the Indonesian banks following the introduction of the fintech policy. A key reason could be a reduction in interest rates as banks attempt to compete with the fintech players that provide similar services to banks.

Ming-Pey Lu (2022) investigated the implication of cashless payments on channels and products such as ATMs, internet banking, mobile banking, credit cards, debit cards, charge cards, and e-money on the efficiency and profitability of Malaysian banks between 2005 and 2018. The results of the study showed a positive relationship between return on equity and return on assets which are measures of profitability, and cashless payments. This study supports the position that the introduction of electronic banking services increases the revenue of banks, while reducing their operational costs, similar to studies by Kivuitu, Aduda, Ochieng and Njeru (2022). Studies done by DeYoung et al. (2007), Itah and Emmanuel (2014) and Yang et al. (2009) also showed the positive impact of electronic channels such as ATMs, and mobile and internet banking on the profitability of banks, increasing their ability to reach customers and improving the ease of bank transactions, resulting in an increase in velocity. Ming-Pey Lu (2022) also showed a positive and statistically significant relationship between cashless payments and the efficiency of the banks in the review, highlighting the evolution of payment developments as positively moderating the efficiency of the banks. Decoupling the different payment channels showed some variation in the impact of cashless payment on the efficiency ratio of the banks, with internet banking and charge cards having a statistically significant and negative relationship with the cost-to-income ratio of the banks. Mobile banking and credit cards showed a statistically insignificant impact, albeit a negative coefficient. A reason for the weakness for credit cards, for example, is that credit cards are only issued to customers that have strong credit ratings with their outstanding balances being settled on the day it is due.

Beyond looking at the implication of fintech services delivered by banks on the performance of banks, Almulla and Aljughaiman (2021) also contrasted the implications on conventional banks and Islamic banks in the Gulf Cooperation Countries. Their investigation showed that fintech services had a negative impact on both conventional and Islamic banks. Results from the study showed a negative relationship between ROA and ROE and fintech services. The lower ROE and ROA is a result of increased investment in IT which has increased expenses, and hence near-term profitability. The reduced ROE and ROA can also be as a result of lower fees as banks compete with fintech operators. The study showed that if the number of fintech firms increased by a factor of one, the finance performance of banks declined by a factor of 0.0364.

Amulla and Aljughaiman (2021) also showed a significant positive relationship between bank size and efficiency, driven by their stronger access to capital, and lower cost deposits. In environments that are not very competitive, larger banks are in a better position to generate higher profitability than smaller banks because of their higher market share, which gives them the ability to maintain larger interest margins from keeping deposit costs low, while lending rates are set higher.

Evaluation of the implications of financial technology on the financial performance of banks in India showed a positive relationship with mobile banking, implying that as more transactions are made on mobile banking platforms, the efficiency and profitability of the banks will increase (Smily and Grace, 2022). Other indicators such as internet banking and transactions done at ATMs show a positive but moderate correlation with profitability and efficiency. The study also shows a moderate relationship between agency banking and efficiency and profitability among

banks in India, which could be attributed to the low contribution of agency banking to the overall revenue level of the banks.

Pham (2023) observed from the study on the impact of mobile banking application ratings on the service income of Vietnamese banks that the contribution of service income will continue to increase with the support of fintech. This is because banks are able to earn more income from fees and commissions related to electronic banking, supported by fintech.

A study on Chinese banks and fintech lenders by Katsiampa McGuinness, Serbera, and Zhao (2022) shows evidence of better financial returns and stability in NPLs with improved digitisation. The study showed a correlation between increased fintech competition and higher special mention loans, implying that increased competition from fintechs erodes the profitability of banks. The study also showed that the positive relationship between ROE and capital weakens when competition from fintechs intensifies. Katsiampa et al. (2022) consider the influence of the growing number of fintech players on excess capital of commercial banks, showing a negative correlation. From the results, one can deduce that the lower profitability due to increased competition from fintech players is dampening the ability of banks to improve capital through retained earnings. A comparison of the fintech players to traditional banks in China showed higher profitability and efficiency of the traditional banks relative to fintech players, as software and hardware costs and R&D of fintech players are relatively higher than those of commercial banks. Fintech players also depend on external funding to drive performance unlike traditional banks that typically drive operations through internally generated capital. The study also showed a relatively higher willingness of fintechs to take risks compared to traditional banks. This is reflected in their relatively higher level of value at risk and delinquent loans when compared to traditional banks. Nguyen and Nguyen (2022) link the improvement in the operating efficiency of commercial banks in Vietnam to the improvement in technology, reflecting the importance on fintech on the industry. The state of information technology (IT) in the sector improved steadily through the review period as banks deployed technology such as point of sale, internet and mobile banking to improve customer service. This shows the importance of non-credit activities in the efficiency of the sector. A comparative analysis of Chinese banks shows the benefits of innovation to the efficiency of the banks, where rural banks show lower efficiency levels compared to the large, city-based commercial banks, reflecting the influence of increased investments in technology on efficiency (Zhao, Pi and Zhang, 2022).

The implications of fintech development and the application of technology appear to have a broadly positive effect on the delivery of services to customers and service costs (Smiely and Grace, 2022; Tshukudu et al., 2022; Almulla and Aljughaiman 2021). However, when the implications of the proliferation of neobanks is considered, the increase in competitive intensity created could weaken efficiency in the short term as institutions increase technology spending to stay ahead..

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