



THE RELATIONSHIP BETWEEN DIGITAL FINANCE (FINTECH) DEVELOPMENT AND ECONOMIC GROWTH

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Abstract. *Digital finance, commonly referred to as FinTech, has transformed the way households, firms and governments make payments, save, borrow and manage risk. This article examines the relationship between FinTech development and economic growth by integrating the classical finance-growth literature with recent theoretical and empirical research on digital financial services. The analysis identifies six main transmission channels through which FinTech can support growth: lower transaction costs, broader financial inclusion, more effective savings mobilisation, improved credit allocation, stronger competition and better risk sharing. Evidence from cross-country studies, household-level research on mobile money and studies of digital lending indicates that FinTech has a positive effect on growth, particularly in developing economies. At the same time, the relationship is conditional on digital infrastructure, financial literacy and institutional quality, and excessive or poorly regulated expansion may generate financial stability risks. The article concludes with policy recommendations for maximising the growth benefits of digital finance.*

Keywords: *FinTech; digital finance; economic growth; financial inclusion; mobile money; digital lending; financial development; regulation.*

INTRODUCTION

The question of whether the financial system contributes to economic growth is one of the oldest in economics. More than a century ago, Schumpeter argued that bankers play a central role in economic development because, by creating credit, they enable entrepreneurs to introduce new combinations of productive resources (Schumpeter, 1934: 74). Modern empirical research has largely confirmed this intuition. In a cross-country study, King and Levine showed that indicators of financial development are strongly associated with subsequent rates of economic growth, physical capital accumulation and improvements in economic efficiency (King & Levine, 1993: 717).

Over the past two decades, however, the financial sector itself has undergone a profound technological transformation. Mobile payments, digital wallets, online lending platforms, crowdfunding, robo-advisory services and blockchain-based applications have changed the structure of financial intermediation. The Financial Stability Board defines FinTech as technology-enabled innovation in financial services that could result in new business models, applications, processes or products with a material effect on financial markets, institutions and the provision of financial services (Financial Stability Board, 2017: 7). Arner, Barberis and Buckley describe the current stage as a new paradigm that emerged after the 2008 global financial crisis, when start-ups and technology companies began to provide financial services directly to consumers, while in many developing countries digital finance developed as a tool of economic development (Arner, Barberis & Buckley, 2016: 1272–1273).

The scale of this transformation is considerable. According to the World Bank Global Findex Database, the share of adults worldwide with an account at a financial institution or mobile money provider rose from 51 percent in 2011 to 76 percent in 2021, and in developing economies the share of adults making or receiving digital payments increased from 35 percent in 2014 to 57 percent in 2021 (Demirgüç-Kunt et al., 2022: 2–4). The McKinsey Global Institute estimated that widespread use of digital finance could raise the GDP of emerging economies by 6 percent, or 3.7 trillion US dollars, by 2025 and create up to 95 million new jobs (Manyika et al., 2016: 4).

These developments raise an important scientific and policy question: does the growth-enhancing role traditionally attributed to financial development also apply to digital finance, and through which mechanisms? The aim of this article is to analyse the relationship between FinTech development and economic growth, to identify its main transmission channels, to review the empirical evidence and to discuss the conditions and risks that shape this relationship. The study uses methods of systematisation, comparative analysis and theoretical generalisation of peer-reviewed research and of the reports of international financial institutions.

MAIN PART

1. Theoretical foundations of the finance-growth nexus

The theoretical basis for linking finance and growth is the functional approach to the financial system. Levine argued that financial markets and institutions emerge to reduce information and transaction costs, and that in doing so they perform five

basic functions: facilitating the trading, hedging and pooling of risk; allocating resources; monitoring managers and exerting corporate control; mobilising savings; and facilitating the exchange of goods and services (Levine, 1997: 691). Each of these functions can influence growth by affecting the rate of capital accumulation and the rate of technological innovation.

Pagano formalised this relationship within a simple endogenous growth model in which the growth rate depends on the marginal productivity of capital, the saving rate and the proportion of savings channelled into investment (Pagano, 1993: 614–615). In this framework, financial development can raise growth by increasing the share of savings that reaches productive investment, by improving the allocation of capital and by influencing the saving rate. Later empirical studies refined these ideas. Rajan and Zingales found that industries which depend heavily on external finance grow disproportionately faster in countries with more developed financial markets, which supports a causal interpretation of the finance-growth link (Rajan & Zingales, 1998: 559). Beck, Levine and Loayza showed that finance affects growth primarily by stimulating total factor productivity rather than through physical capital accumulation alone (Beck, Levine & Loayza, 2000: 261). In a comprehensive survey, Levine concluded that the weight of the evidence suggests that better-functioning financial systems ease external financing constraints and thereby promote economic growth (Levine, 2005: 921).

FinTech does not replace these functions; rather, it changes the technology with which they are performed. Gomber, Koch and Siering propose the concept of a “digital finance cube” that combines three dimensions: the business functions of digital finance, the technologies involved and the institutions providing the services (Gomber, Koch & Siering, 2017: 540–541). From this perspective, the key economic question is whether digital technologies perform the traditional financial functions more cheaply, more inclusively and more efficiently. Philippon observed that the unit cost of financial intermediation in the United States remained remarkably stable for over a century despite major advances in information technology, and argued that FinTech has the potential to reduce these costs substantially (Philippon, 2016: 2–3).

2. Transmission channels from FinTech to economic growth

On the basis of the theoretical literature, six interrelated channels can be distinguished through which FinTech development influences economic growth. They are summarised in Figure 1.

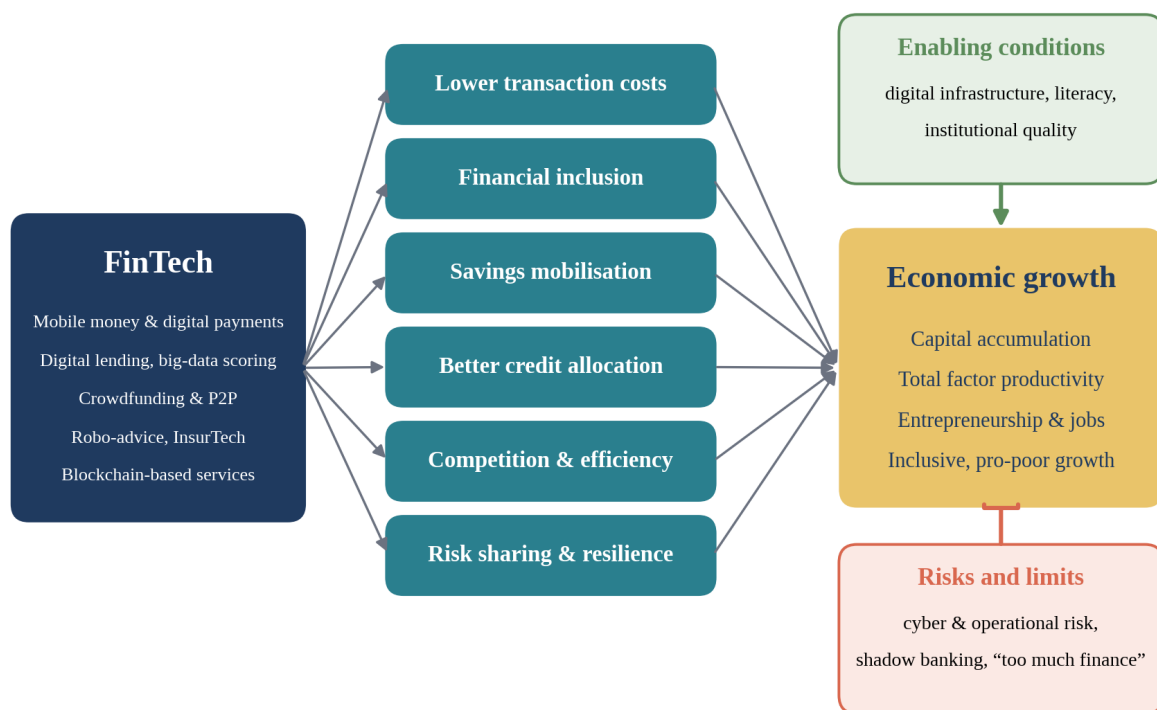


Figure 1. Transmission channels between FinTech development and economic growth (compiled by the author on the basis of Levine, 1997: 691; Khera et al., 2021: 3; Financial Stability Board, 2017: 13–15)

The first channel is the reduction of transaction costs. Digital payments eliminate many of the costs associated with cash, such as transport, storage, security and time. Jack and Suri found that the lower cost of transferring money through M-PESA in Kenya allowed households to share risk more effectively across wide social networks (Jack & Suri, 2014: 183–184). The second channel is financial inclusion. Ozili notes that digital finance can provide convenient and affordable services to low-income individuals who were previously excluded from the formal financial system (Ozili, 2018: 329–330). Khera and colleagues constructed a digital financial inclusion index for 52 emerging market and developing economies and found that the adoption of digital financial services has been a key driver of financial inclusion, with the greatest progress observed in Africa and Asia (Khera et al., 2022: 213).

The third channel is savings mobilisation. When people receive wages, remittances or government transfers directly into digital accounts, a larger share of their resources enters the formal financial system and can be intermediated into investment. The Global

Findex report shows that receiving digital payments often acts as a gateway to other uses of accounts, including saving and borrowing (Demirgüç-Kunt et al., 2022: 13). The fourth channel is improved credit allocation. Digital lenders use alternative data and machine learning to assess creditworthiness. Berg and colleagues demonstrated that even simple variables from a customer's digital footprint provide information about default risk that is comparable to, and complementary with, traditional credit bureau scores (Berg et al., 2020: 2845–2846). Frost and colleagues found that big tech firms can use data from their platforms to lend to small firms that lack collateral or credit history, thereby reaching borrowers underserved by banks (Frost et al., 2019: 763–764).

The fifth channel is competition and efficiency. The entry of FinTech firms puts pressure on incumbent banks to reduce costs and improve services. Fuster and colleagues showed that FinTech mortgage lenders in the United States process applications about 20 percent faster than other lenders without an increase in default rates, and respond more elastically to changes in demand (Fuster et al., 2019: 1854–1855). Thakor observes that FinTech is reshaping the competitive landscape of banking in payments, lending and deposit-like services (Thakor, 2020: 1–2). The sixth channel is risk sharing and resilience. By enabling rapid transfers in response to shocks, digital finance helps households to smooth consumption and to avoid costly coping strategies, such as selling productive assets (Jack & Suri, 2014: 184).

3. Empirical evidence on FinTech and economic growth

Empirical evidence on the growth effects of FinTech comes from several levels of analysis. At the macroeconomic level, Khera, Ng, Ogawa and Sahay used an instrumental variable approach for 52 developing countries and found that the exogenous component of digital financial inclusion is positively associated with growth in GDP per capita over 2011–2018, suggesting that digital financial inclusion can accelerate economic growth (Khera et al., 2021: 17–19). The same study identified access to infrastructure, financial and digital literacy, and institutional quality as the key determinants of digital financial inclusion (Khera et al., 2021: 21). An IMF departmental paper further documented that digital financial inclusion advanced rapidly in many countries, including some where traditional financial inclusion stagnated, and that it was associated with higher GDP growth (Sahay et al., 2020: 7–10). The global expansion of account ownership and digital payments that underlies these effects is shown in Figure 2.

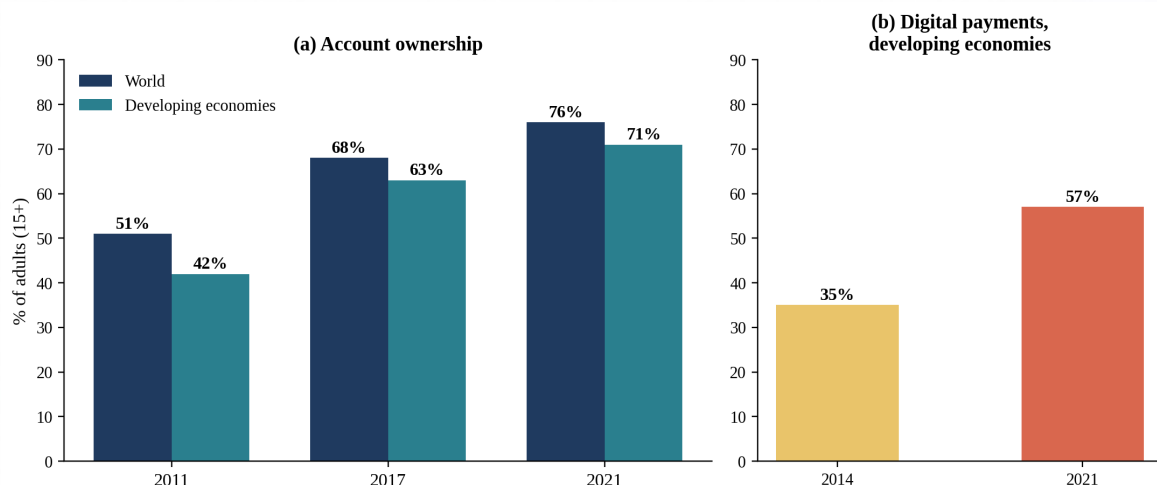


Figure 2. Account ownership and digital payments, % of adults (compiled by the author on the basis of Demirgüç-Kunt et al., 2022:2–4)

At the microeconomic level, the most influential evidence comes from studies of mobile money in Kenya. Suri and Jack estimated that access to M-PESA increased per capita consumption levels and lifted about 194,000 households, or 2 percent of Kenyan households, out of poverty, with particularly strong effects for female-headed households, many of whom moved from farming into business occupations (Suri & Jack, 2016: 1288). Beck and colleagues showed, using both firm-level data and a calibrated general equilibrium model, that mobile payment technology facilitates entrepreneurs' access to trade credit and produces significant gains in output and welfare (Beck et al., 2018: 162–163). These findings indicate that the growth effect of digital finance operates not only through aggregate financial deepening but also through the productive choices of households and small firms.

Research on digital lending provides additional evidence. Cornelli and colleagues found that FinTech and big tech credit have grown rapidly worldwide and are more developed in countries with higher income levels, less competitive banking systems and less stringent regulation (Cornelli et al., 2023:1–2). Such credit expands financing opportunities, but the drivers identified also point to a potential risk: part of the growth of digital lending may reflect regulatory arbitrage rather than genuine efficiency gains. Buchak and colleagues estimated that in the US mortgage market roughly 60 percent of the growth of shadow banks, including FinTech lenders, can be attributed to the increased regulatory burden on traditional banks and around 30 percent to technology (Buchak et al., 2018:453).

4. Nonlinearities, risks and conditions

The positive relationship between finance and growth is not unlimited. Arcand, Berkes and Panizza found that finance begins to have a negative effect on output growth when credit to the private sector exceeds approximately 100 percent of GDP (Arcand, Berkes & Panizza, 2015:105). Sahay and colleagues similarly showed that the growth benefits of financial development weaken at higher levels of development and that expanding finance too fast can create instability (Sahay et al., 2015: 5–6). This nonlinear relationship, illustrated schematically in Figure 3, is directly relevant to FinTech: in low-income economies with low financial depth, digital finance is likely to operate on the growth-enhancing part of the curve, whereas in highly financialised economies its marginal benefits may be smaller and its risks larger.

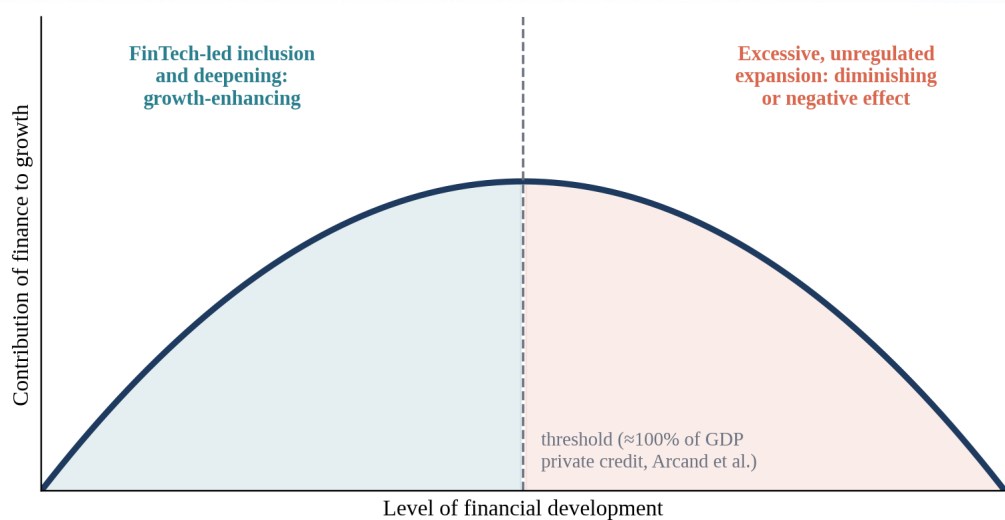


Figure 3. Schematic representation of the nonlinear finance-growth relationship (compiled by the author on the basis of Arcand, Berkes & Panizza, 2015: 105; Sahay et al., 2015:5)

The Financial Stability Board identified several financial stability risks associated with FinTech, including micro-financial risks such as maturity and liquidity mismatches and leverage, and macro-financial risks such as contagion, procyclicality and excess volatility, together with operational risks related to cyber attacks, third-party dependence and legal uncertainty (Financial Stability Board, 2017:13–18). The rise of big tech firms in finance also raises concerns about market concentration and the use of personal data (Frost et al., 2019:785–786). In addition, the benefits of FinTech are uneven where the digital divide persists: without mobile networks, digital identification and financial literacy, large segments of the population cannot use digital financial services (Khera et al., 2021: 21).

Consequently, the regulatory environment is a decisive condition for turning FinTech development into sustainable growth. Zetsche and colleagues argue that regulatory sandboxes and other forms of “smart regulation” allow authorities to support innovation while monitoring emerging risks and adjusting rules proportionately (Zetsche et al., 2017: 45–47). An effective policy framework therefore needs to combine openness to innovation with consumer protection, data governance, cybersecurity standards and the supervision of systemically important digital platforms.

CONCLUSION

The analysis presented in this article shows that FinTech development and economic growth are positively related, and that this relationship rests on well-established theoretical foundations. Digital technologies perform the core functions of the financial system, including payments, savings mobilisation, resource allocation and risk management, at lower cost and on a much wider scale. Six main transmission channels were identified: lower transaction costs, financial inclusion, savings mobilisation, improved credit allocation, competition and efficiency, and risk sharing and resilience.

Empirical evidence at both the macro and the micro level supports the growth-enhancing role of digital finance. Cross-country studies show that digital financial inclusion is positively associated with growth in GDP per capita in developing economies, while household-level research on mobile money demonstrates reductions in poverty and a shift towards entrepreneurial activity. Evidence from digital lending indicates that alternative data and new technologies can improve access to credit for underserved borrowers.

The relationship is nevertheless conditional and nonlinear. Its strength depends on digital infrastructure, financial and digital literacy, institutional quality and appropriate regulation, and excessive or poorly supervised expansion may undermine financial stability. For developing and transition economies, including Uzbekistan and other Central Asian countries, this implies several policy priorities: expanding digital infrastructure and digital identification systems, improving financial and digital literacy, promoting interoperable payment systems and competition, and building proportionate regulatory frameworks such as regulatory sandboxes. Future research should use country-level and regional data to estimate the growth effects of FinTech in Central Asia and to identify the threshold beyond which the risks of digital financial expansion begin to outweigh its benefits.

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