



BACKGROUND NOTE

Innovation in the Financial Sector

Shu Tian

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INNOVATION IN THE FINANCIAL SECTOR

Shu Tian¹

A. Financial Innovation

Financial innovation is defined as the emergence, diffusion, and popularization of new financial instruments, as well as new financial technologies, institutions and markets. Tufano (2003) Frame and White (2004) describe financial innovation as new financial products, services, production processes, and organizational forms that reduce costs, lower risks, or provide enhanced product/service/instrument that better meet market participants' demands. It has been shown in the literature that technology and finance innovation evolve together, and financial innovation is essential for sustaining economic growth (Laeven et al. 2015).

Awrey (2013) analyzes the demand-side and supply-side incentives for financial innovation. The demand-side incentive for financial innovation reflects rational response to market imperfections in the forms of taxation, regulation, information asymmetry, transaction costs, and moral hazard (Tufano 2003). For example, investors' demand for diversification, risk hedging, or higher yield in low interest rate period fosters the introduction of new financial derivatives and structured financial instruments. The supply-side incentive for financial innovation arises from financial intermediaries when they meet clients' demands, mitigate regulations' impacts, and recreate their monopolistic situation. With rational participants, financial innovation can benefit the financial system by enabling market completeness, mitigating market friction, boosting the quality and variety of financial services, enhancing risk diversification, and improving market efficiency (Beck et al. 2016).

The benefit of financial innovation is challenged by the fact that market participants have different beliefs and make irrational decisions. These behavioral biases lead to speculation and failure of market self-correction, which increase risks in the financial system (Simsek 2013). Literature on financial innovation extensively discussed the growth–fragility tradeoff

¹ Shu Tian is an Economist at the Economic Research and Regional Cooperation Department, Asian Development Bank (ADB). This note is background for the Asian Development Outlook 2020 theme chapter on *What Drives Innovation in Asia?*

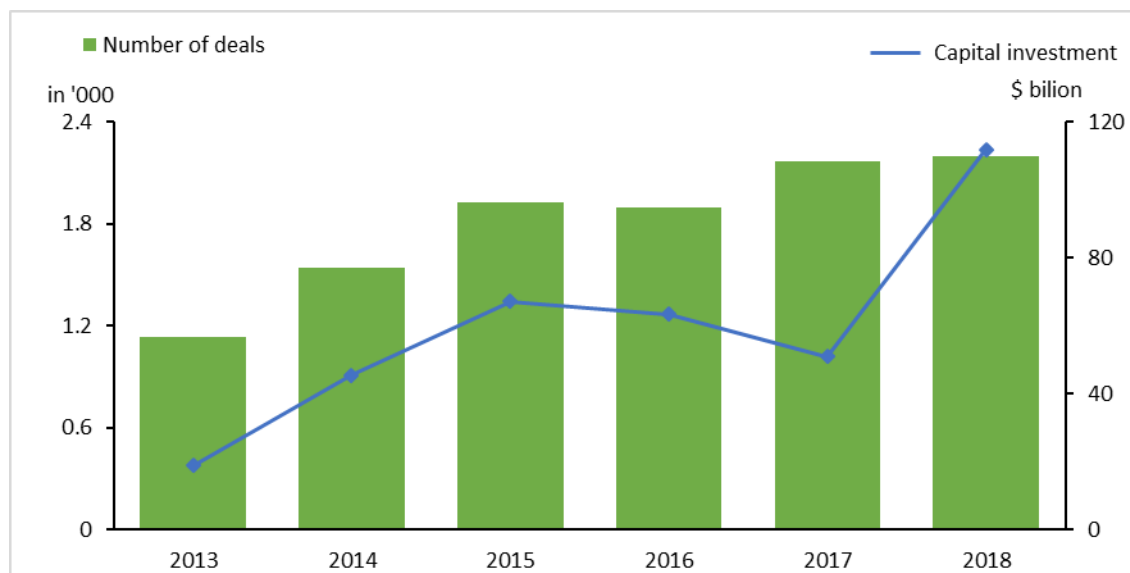
of financial innovation. Beck et al (2016) document a positive net effect of financial innovation on economic growth as well as a negative financial innovation–bank fragility association during crisis. On the dark side of financial innovation, Boz and Mendoza (2014) find that financial innovation contributes to underpricing of risks in a new financial environment and leads to credit boom followed by sharp bust using a learning model of financial innovation. Fostel and Geanakoplos (2016) show that financial innovations, in the form of changing promises and backing collaterals, will affect prices and lead to over- or under-investment, even when the fundamentals remain unchanged. Li et al (2018) reveal that issuers make higher profit via designing new financial products that cater to investors' behavioral biases. Pérignon and Vallée (2017) further point out that financial innovation can be driven by political incentive, which increase agency costs proxied by risk in local government debt.

B. Fintech and Its Role on Financial Inclusion

In recent years, the term financial technology (fintech) has emerged as a new model for financial innovation that describes the fusion of finance and technology (Goldstein et al. 2019). Fintech covers an extensive bundle of technologies, including mobile networks, big data, cloud computing, distributed ledger technology, artificial intelligence, and data analytic techniques, amongst others, which shape a wide range of operations in financial industry. The past few years witnessed a fast increase of investment in fintech. (see figure). According to CB Insights,² global Venture Capital-backed fintech funding surged from US\$17 billion in 2015 to US\$40.6 billion in 2018. Fintech already influenced a variety of financial services such as microfinance, blockchain, payments, personal finance, digital banking, insurance, wealth management, capital markets, money transfer, and mortgage.

² CB Insights. 2019. *Global Fintech Report Q3 2019*. <https://www.cbinsights.com/research/report/fintech-trends-q3-2019/>.

Total Investment Activity in Financial Technology, 2013-2018



Note: Investment activity includes venture capital, private equity and mergers and acquisitions. Recreated based on Consultancy.org.

Source: Consultancy.org. <https://www.consultancy.eu/news/2390/global-fintech-investment-more-than-doubled-to-112-billion>.

Utilizing technology advances, fintech enhances financial inclusion and facilitates greater access to formal financial services of different customer groups. Given the high risk and difficulty on information collection of underserved households and small and medium-sized enterprises (SMEs), Fintech provides solutions via digital financial services and enhanced risk assessment skills. According to CB Insights (2019), digital banking businesses are specialized to serve specific sectors and demographic via B2C and B2B debit and credit extended to underbanked and unbanked individuals, household, and SMEs. In doing so, fintech not only improves the variety and efficiency of financial services, but also enhances access to financial services and financial inclusion³. A research by Oliver Wyman and MicroSave (2017)⁴ estimates that digital financial solutions can address about 40% of unmet demand for payment services and 20% of credit requirements of poor households and small businesses in Asia.

³ United Nations (2006) defines an inclusive finance sector to be accessible to everyone in each main customer groups.

⁴ This study is commissioned by ADB.

Fintech can serve as a key driver of financial inclusion in emerging markets where financial inclusion level is lower compared with higher income economies⁵. Qamruzzaman and Wei (2019) document a positive association between financial innovation and financial inclusion in both the short and long term using a sample of six South Asian countries. CB Insights (2019) shows that customers in African emerging markets benefited from digital microfinance in the forms of mobile payment, microcredit and saving accounts. The Asian Development Bank (ADB) plays an important role in supporting financial inclusion using fintech across developing Asia. On SME financing, ADB-supported artificial intelligence-enabled credit score system helped more than 8,000 SME clients in the Greater Mekong Subregion to obtain credit of about \$50,000 per client by the end of March 2018⁶. ADB also supported a cloud-based banking application in the Philippines and Branchless banking in Indonesia, which boosted financial inclusion in the Association of Southeast Asian Nations (ASEAN). As shown in the literature, financial inclusion contributes to human development (Sarma and Pais 2011) and enhances financial stability (Hannig and Jansen 2011 and Morgan and Pontines 2014). Developing Asia will benefit from the development of fintech.

C. Challenges Associated with Financial Innovation

While innovation in the finance sector have benefits in terms of market efficiency, market completeness, and financial inclusion, it also brings regulatory challenges, such as speculations in the case of financial derivatives and structured instruments, and cybersecurity, technical vulnerabilities, data governance, as well as privacy protection in the case of fintech.

Balanced regulation stance will benefit the development of the finance sector. Regulators needs to monitor the risks associated with financial innovations to maintain resilience as well as prevent curbing innovations that will continue to foster financial development. Coordination among global or regional regulators are also called when tackling financial innovations in the global financial markets, such as crypto currency (Park et al. 2019).

⁵ Park and Mercado (2015) illustrate that the level of financial inclusion is positively related to income levels of the economies.

⁶ ADB, 2018. Advancing Financial Inclusion through FinTech in ASEAN, ADB President's speech at the ASEAN Finance Ministers' and Central Bank Governor's Joint Meeting, 6 April 2018, Singapore.

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