

Durham Research Online

Deposited in DRO:

10 September 2021

Version of attached file:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Lai, Karen P.Y. (2020) 'FinTech: The dis/re-intermediation of finance?', in The Routledge Handbook of Financial Geography. , pp. 440-458. Routledge Companions in Business, Management and Marketing.

Further information on publisher's website:

<https://www.routledge.com/The-Routledge-Handbook-of-Financial-Geography/Knox-Hayes-Wojcik/p/book/9780815369738>

Publisher's copyright statement:

This is an Accepted Manuscript of a book chapter published by Routledge in The Routledge Handbook of Financial Geography on 15 December 2020, available online: <http://www.routledge.com/9780815369738>

Additional information:

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a [link](#) is made to the metadata record in DRO
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full DRO policy](#) for further details.

FinTech: The dis/re-intermediation of finance?

Version: 30 April 2020

Cite as: Lai, Karen P.Y. (2020) 'FinTech: The dis/re-intermediation of finance?' in Janelle Knox-Hayes and Dariusz Wójcik (Eds.), *The Routledge Handbook of Financial Geography*, London: Routledge, pp. 440-458.

Karen P.Y. Lai

Department of Geography, Durham University

karen.lai@durham.ac.uk

Abstract

FinTech encompasses a new wave of companies developing new products and platforms to change the way businesses and consumers make payments, lend, borrow and invest. This chapter examines the ways in which FinTech products and services are reshaping the intermediation function of banks and how financial institutions have engaged with FinTech firms in different ways, resulting in variegated forms of organizational change, inter-firm relationships and changing production and financial networks. Setting up banks and technology firms as direct competitors in the FinTech ecosystem, as 'incumbents' versus 'disruptors', overly simplifies their position and power in different product segments, geographical markets and industry networks. Instead, a financial ecologies approach offers greater flexibility for studying shifting configurations of economic actors across banking and FinTech sectors, with important implications for how we understand the nature of financial/non-financial firms, changing roles of international financial centers and the nature of inter-firm and inter-industry networks in global finance.

Introduction

FinTech, a short hand for 'financial technology' has been making waves in the headlines in recent years, particularly in terms of its potential to disrupt the landscape of not just banking but also a range of financial institutions, intermediaries, technology and e-commerce companies (The Economist, 2015, Langley and Leyshon, 2017b, Hendrikse et al., 2018). FinTech encompasses a new wave of companies that are developing products, systems and platforms to change the way businesses and consumers make payments, lend, borrow and invest. Operating at the intersections of financial services and technology sectors, technology-focused start-ups and new market entrants are creating new products and services that are currently provided by the traditional financial services industry. In doing so, FinTech is gaining significant momentum and causing disruption to the traditional value chain and roles of

conventional financial institutions. The most disrupted sectors, or at least most frequently highlighted in the news, are payments and fund transfers, crowdfunding, and peer to peer lending. Just between 2013 to 2014, global investment in FinTech ventures tripled from US\$4.05 billion to US\$12.21 billion, outstripping the growth in overall venture capital investments (Accenture, 2015). While there are on-going debates about whether the future of financial services would be characterised by ruptures (due to displacement or obsolescence) or redistribution (as existing players grow and enrich the market or simply acquire new FinTech firms and technologies), FinTech is being actively promoted in a number of international financial centres (IFCs), such as New York, Luxembourg, Singapore and Hong Kong as presenting opportunities for capturing new market trends and developing new capabilities that would bolster their IFC status.

Amidst the growing interest and enthusiasm about FinTech in the industry press and in consultancy reports, there is limited scholarly engagement with debates on how exactly FinTech is reshaping the intermediary functions of banks and financial institutions, and impacts on firm strategies, organisation change, inter-firm relationships and underlying spatial dimensions of such evolving industrial landscapes and networks. This chapter examines the ways in which FinTech products and services are reshaping the intermediation function of banks, and the ways in financial institutions have engaged with FinTech firms in different ways, resulting in variegated forms of organizational change, inter-firm relationships and changing production and financial networks.

The discussion focuses on the roles of banks as intermediaries between capital and production in providing financial products and services, and critically unpacks the positioning of banks as ‘incumbents’ vis-à-vis FinTech firms as ‘disruptors’. The cases of Singaporean bank DBS and British bank RBS exemplify the variegated ways in which banks are engaging with FinTech firms and technologies in selective ways in order to meet specific organizational goals or to mobilize business strategies in certain geographical markets. While it is difficult to conclude who might be the winners and losers in such a rapidly evolving landscape (especially since the banking industry is still in the early phase of FinTech engagement and collaboration), such an analysis critically evaluates the potential of FinTech firms in disintermediation, given the continuing dominance of banks in shaping the terms of engagement between banking and

FinTech firms. An enquiry into the intermediary function of banks brings new insights into issues of power in economic processes and inter-firm relationships, in which financial ecologies serve as a framework for studying shifting configurations of economic actors across industry sectors and geographical scales. Such an ecologies approach emphasizes the fluidity and uncertainty of dynamic relationships between different actors, be they banking or technology firms, regulators or consumers, as they form distinctive groupings of business relationships, financial practices and institutional networks that are further embedded in other configurations of wider technological or economic trends. The study of FinTech through financial ecologies is particularly well suited to examining the intersection of banks and financial institutions with technology firms and how they are in turn shaped by changing consumer expectations and regulatory environments. These have significant implications for how we might study the nature of financial/non-financial firms, changing roles of international financial centers and the nature of inter-firm and inter-industry networks in global finance.

Incumbents and disruptors

In one of the early reports on FinTech from the World Economic Forum (2015), payments, deposits and lending, and capital raising were already identified as the top sectors for disruption, in terms of changing the intermediary roles of banks in existing financial transactions or relationships. For B2C (business-to-consumer) and B2B (business-to-business) lending, the emergence of online platforms allows individuals and businesses to lend and borrow without necessarily going through traditional banking institutions. Innovations such as new data sources and big data analytics are changing the pricing of risks, lending processes and lowering operating costs. More recently, the payments industry has also experienced a high level of disruption with the rise of blockchain technologies, new digital applications facilitating easier payments, and alternative processing networks, which could cut out intermediaries like banks, clearing houses and exchanges. Overall, disintermediation is seen as FinTech's most powerful potential impact on reshaping the financial services industry and financial networks.

Asset management and insurance are also feeling the pressure from FinTech innovations. For the insurance sector, new calculative technologies are changing the pricing and underwriting of risks, changing consumer behaviour, and new distribution and business models. The emergence of data analytics in the investment sector has enabled firms to target investors in

new ways by delivering tailored products and automated investing through robo-advisors, which are digital platforms that provide automated, algorithm-driven financial planning services with little or no human supervision. Robo-advisors have gained recent popularity as consumers seek low-cost investment opportunities, with the ability to set up a customised, diverse portfolio and access to wealth management services previously reserved for the ultra-wealthy.

To examine how FinTech products and services are reshaping the intermediation function of banks and the ways in which banks have engaged with FinTech firms, this chapter takes an actor-focused approach in identifying key actors in the evolving FinTech ecosystem, which are grouped into 5 main types:

- **Banks** that have loans and deposit facilities as well as a range of other financial service functions (such as credit, foreign exchange, money markets and underwriting). These banks may be very large entities with global customer base, such as HSBC, Citigroup and Deutsche Bank, or mid-sized regional or local banks, such as Santander, Macquarie and DBS. These are often seen as ‘incumbents’ in terms of their well established hold on various segments of banking and finance and large customer base, who are facing increasing competition from FinTech companies.
- **Non-bank financial institutions** such as insurance companies, venture capital firms, hedge funds and asset managers who offer financial services but do not have a banking license. While some of their key services are also being affected by FinTech applications (such as robo-advising and peer-to-peer lending), they tend to be seen as being less ‘threatened’ by FinTech companies compared to banks.
- **Big technology companies** that are active in the financial services segment but not exclusively so, such as Apple, Google and Alibaba. They are seen as ‘disruptors’ entering into financial services provision as a non-financial company.
- **Start-ups** are usually small companies that are focused on a particular innovative technology or process that have the potential to change existing financial transactions or relationships. These are often fast-moving companies that are new to financial services and also commonly labelled as ‘disruptors’. Companies include Stripe (mobile payments), Betterment (automated investing), Prosper (peer-to-peer lending), Moven (retail banking), and Lemonade (insurance).

- As **state entities**, regulators and government agencies work with financial institutions as well as technology firms in the revising or drafting regulatory frameworks so as to ensure their relevance and effectiveness. Many of them are also taking on promotional roles in terms of industry communication and outreach activities to encourage research and investment in fintech solutions. These regulatory and promotional policies may alter the scope of competitiveness for incumbents and disruptors by, for instance, increasing the cost of compliance for some firms or removing licensing requirements for certain types of financial services.

A key dimension of studying different types of actors relate to how FinTech might be reshaping the industry power and positions of incumbents (usually existing, large financial institutions) and disruptors (often small start-ups or large technology firms moving into financial business segments), and the strategic response of incumbents in protecting their market share or developing technological expertise themselves (through organic growth or acquisitions). Existing financial institutions, for instance, could leverage on their existing customer relationships and firm networks when developing new processes for predicting consumer needs, offer compelling value propositions and generate new income streams. On the other hand, technology firms are placing significant pressure on the competitive landscape with lower costs, higher efficiency and ability to tailor products that better suit that customer profiles and needs. Non-bank internet giants such as Ant Financial, JD.com, and Amazon Lending are increasingly encroaching on traditional banks' core businesses by extending loans to retail customers and small- and medium- enterprises (SMEs). These internet and technology firms often extend their edge in artificial intelligence, data analytics and the vast amounts of client data they have amassed through their technology services and internet platforms to service these borrowers, especially those who had previously been underserved by banks.

Amidst these broader trends and expectations, however, there are different drivers in different geographical markets for FinTech developments. In developed markets such as the US and Europe, where banks have well established networks with corporate and retail customers, the advantages offered by FinTech come from the basis of improving efficiency, reducing transaction costs and adding value to businesses and consumers. In developing economies, on the other hand, where large segments of the population are still unbanked, FinTech tends to be

driven by other critical needs such as financial inclusion and access to business working capital, building on earlier history of micro-lending programs (Duncombe and Boateng, 2009, Roy, 2010). This means the ways in which banks and technology firms engage with one another will differ across geographical markets, in terms of who might have greater leverage or advantages.

Integrating banking and FinTech

In the contemporary marketplace where consumers are used to quick and convenient access to a wide range of services, FinTech firms are placing considerable pressure on banks by offering financial products, such as business and personal loans, payments, mobile wallets, and investments, in quicker and more flexible ways. In the lending space, for example, FinTech lenders have become particularly attractive to business and retail consumers due to much faster approval, simpler transaction process, and greater flexibility around the types of documents and evidence required for application and reporting. Their mode of delivery via online and mobile platforms also appeal to a growing segment of consumers who have become used to such platform-based interface and value the convenience of mobile financial applications that integrate with other lifestyle usage (e.g. retail payments, loyalty programs, travel services). These are creating competitive pressures on banks to adjust to digitalization, data-driven modes of decision-making and changing consumer behaviour. However, setting up banks and technology firms as direct competitors in the FinTech ecosystem, as ‘incumbents’ versus ‘disruptors’, overly simplifies their position and power in different product segments, geographical markets and industry networks. The relationships with banks and newer technology-focused firms are much more complex than those presented in consultancy reports and mainstream media. Many banks are engaging with FinTech firms and technologies in selective and variegated ways, ranging from creating wholly owned FinTech subsidiaries to the selective licensing of FinTech products and platforms under the auspices of the banks. The use of Application Programming Interface (API) offers a useful lens for examining the nature of banking-FinTech relationships.

APIs have been around since the 1960s but have become a hot topic in an increasingly digital economy. At the very basic level, an API is an interface that software uses to access particular information or connect to certain resources, such as data, servers, devices and other applications, in order to perform certain tasks. While they used to be more limited to technical

domains (such as computer coding and IT infrastructure), they have now become important for business growth and increasingly used in sectors such as automotive and retail. Within the automotive industry, for instance, APIs are used to embed efficiency data, driving statistics, route information and real-time alerts onto dashboards. Some retailers are using APIs to set up multi-brand shopping platforms, track inventory, and help consumers locate stores. In banking and FinTech sectors, APIs are playing vital roles in connecting different organizations and technologies into broader ecosystems of information and resources (Figure 1). APIs underpin many types of financial product delivery as they are a form of infrastructure technology that enables new forms of data packaging and analytics to ‘speak’ to one another between old legacy systems of banks and new offerings by FinTech companies. In a similar way to open-source software, APIs allow developers, applications, and websites to tap into databases and assets by acting like a universal converter plug to access a range of data and services. Figure 2a shows various functions offered by APIs in banking, ranging from traditional loans and lending to digital payments, accounting and fraud detection. Through combining or ‘stacking’ APIs, FinTech firms are able to tap into markets and consumers previously underserved by banks as they could bypass the legacy systems of banks to offer particular products or services directly to corporate or retail consumers.

*** **Figure 1.** API connects banking services and FinTech applications to meet customer needs. (Source: Author) ***

*** **Figure 2a.** Different types of API functions (Source: Author) ***

Figure 2b shows some examples of FinTech firms that have made use of different APIs to offer different combinations of financial products and services. Stripe, for instance, is a technology company that has made significant inroads into the online payments sector in recent years. By stacking various APIs in machine learning, fraud detection, data analytics, payment systems and tax management, Stripe is able to offer highly customized and cost-effective financial and business solutions to companies ranging from startups to large internet businesses like Amazon, Google, Kickstarter and Expedia. Under the Stripe umbrella, for example, Radar offers fraud detection through machine learning across data points and transaction patterns; Sigma is a business analytics tool for corporate analysis, business management and reporting

requirements; Stripe Billing API integrate into existing websites, mobile apps, and customer relationship management (CRM) systems to offer customized subscription and pricing models; and Atlas is a tool for startups offering company incorporation, bank accounting opening and tax advisory services. A key selling point of such FinTech companies is that they not only offer financial solutions (e.g. loans, mobile payments, invoicing, foreign exchange) but, through combining APIs, also offer a suite of customizable business solutions such as business analytics, accounting, customer relationship management, shipping and data security. In doing so, they offer substantive value propositions to companies in moving their financial services needs away from traditional banks to FinTech companies, especially if their the majority of their businesses are already based online and therefore require strong integration with online systems (whether for payments, loyalty programs, data management, or cloud services).

*** **Figure 2b.** FinTech firms offer a range of financial products and services by stacking APIs. ***

Banks are certainly aware of the strengths of APIs and many are working at finding ways to open up or integrate their existing system to the wide library of APIs available. A key obstacle is the fact that most banks have old legacy systems for payments, customer data management, credit scoring and so on, which are secure but also slow and difficult to integrate with new formats and demands that are increasingly driven by digital technologies and internet economies. Banking data, in dealing with “matters as varied as account transactions, mortgage payments and fitness club subscriptions, is currently not easy to share with a third party in a format that computers can read for feeding into apps or for use by new banks getting off the ground” (Hussain, 2017). On the other hand, for FinTech firms and new challenger banks, while they exist as highly flexible platforms that offer plug-and-play capabilities through APIs, their functions can be limited if not connected to customer accounts and data, which many banks do still hold. Therefore, setting up banks and FinTech firms as direct competitors, as ‘incumbents’ versus ‘disruptors’, overly simplifies their roles and positions in the market.

In seeking to unpack the roles and practices of different banks and FinTech firms, trace the emergence of new relationships and networks, and examine broader shifts in the market for financial products and business services, the concept of financial ecologies could be a useful

device. A financial ecologies approach recasts the financial system as a coalition of smaller constitutive ecologies, such that distinctive groupings of financial knowledge, practices and subjectivities emerge in different places with uneven connectivity and material outcomes (Lai, 2016). Ecological networks capture the fluidity and emergence of socio-spatial relations, rather than resultant forms, which is well suited for analyzing tentative and emerging roles, networks and structures in the FinTech space. Such configurations are constantly open to new elements, broken alliances and reconstitutions. This financial ecologies approach is being taken up by some scholars to understand new financial logics and network behavior, such as the crowdfunding economy (Langley and Leyshon, 2017a), how peer-to-peer lending reshapes entrepreneurial subjectivities (Carolan, 2019), and the investment philosophy and practices underpinning financial coaching and social finance (Rosenman, 2019, Loomis, 2018). Framing FinTech as ecologies can be particularly effective for capturing a certain ‘stickiness’ to relations and processes that might prove more stubborn to shifting than others, thereby preserving existing power relations amongst ‘incumbents’ and ‘disruptors’; or the difficulty of predicting or steering mutations and new paths once they are set into motion, which then permits for greater scope of economic outcomes and possibilities in economic change.

For banks who seem to be facing increasingly strong dis/re-intermediation challenge from FinTech firms, many of them are making different forms of investments in technology in terms of in-house infrastructure and technology-focused teams or departments, as well as engaging with FinTech firms to access or take over different assets and capabilities in areas such as blockchains, AI, payments and security. While almost no banks can now claim to ignore FinTech, their response and forms of engagement and investment in FinTech are quite varied and generally fall into four categories (Arnold, 2018). The first group of banks (sometimes called ‘digital attackers’) are *aggressive* in launching their own digital banks to enter new markets or to defend their market share from new FinTech players. Examples include the digital savings and lending operation launched by Goldman Sachs (named Marcus) and Yolt launched by Dutch bank ING, which are targeted at retail banking consumers. The second approach is *acquisitions*, in which banks would buy or invest in a start-up. Spain’s BBVA, for instance, is one of many banks that has acquired a string of FinTech companies in different countries, such as Simple (a web and mobile application) in the US, Openpay (a payments platform) in Mexico and Holvi (a banking and business management platform) in Finland. The third group of banks have entered into *partnerships* with big technology companies. The

partnership between JPMorgan Chase and Amazon, for example, brings together the biggest bank and largest e-commerce company in the USA and gives the latter access to the huge database of Amazon Prime customers. In expanding its use of blockchain technologies, Standard Chartered has partnered with Alipay to launch a digital remittance service for cross-border payments. A fourth group of banks are using FinTech for *diversification* and moving in to new markets as they face increasing pressure in their core payments and lending segments. Royal Bank of Canada, for instance, is aiming to become a more-than-banking firm by offering customers more diverse range of services such as company registration, cloud based accounting software, and researching neighborhoods when buying or selling a home, through a new digital platform that is integrated with other service partners. One particular area of concern common to all these four categories of banks is that of security and data protection. This is also an area where technology firms have been particularly important for banks and other financial institutions as they could offer advanced data analytics and digital security solutions to control access, authenticate information, or detect fraudulent or suspicious transactions.

As seen in the above discussion, banks are taking the potential disruptive impacts of FinTech companies seriously by engaging with FinTech firms and technologies in various ways. This does not mean that FinTech firms are able to completely change or reconfigure business strategies and organizational networks of banks, as the former often do not have the customer base, brand name and economies of scale of banks in order to fully utilize their technologies. The increasing use of APIs presents a good example of how banks and FinTech firms are partnering in changing the formulation and delivery of financial products and services. The next section presents two examples to illustrate how banks engage with FinTech in selective and varied ways in order to pursue particular goals, ranging from tentative partnerships and selective investments to complete incorporation or launching its own digital subsidiary bank. At the same time, these case studies also point to the unstable nature of such financial ecologies as both banks and FinTech firms continually reassess their market position in light of new opportunities and challenges from new technologies and regulatory changes, such that these networks are always in flux and evolving over time.

Case study 1: DBS – Geographical expansion

DBS Bank was formerly known as the Development Bank of Singapore before it adopted the present moniker in 2003 to better reflect its changing role as a regional bank (Lai and Tan, 2016). The strategy for regional expansion into Asia was aligned with state developmental goals for Singaporean firms to develop a ‘regional wing’ to Singapore’s economy and create further growth opportunities for Singaporean firms in overseas markets (Lai and Daniels, 2017). DBS’ engagement with FinTech firms and technologies reflects this strategic interest of the bank to expand into new geographical markets in the region. This is done through the creation of a wholly owned subsidiary bank called DBS Digibank and an accelerator program called DBS Xchange (Figure 3).

*** **Figure 3.** Financial ecologies of DBS, Digibank, DBS Xchange and other FinTech firms
(Source: Author) ***

Digibank was set up in India and Indonesia to tap into the market potential of large unbanked populations in these two economies. It launched in India in April 2016 as India’s only mobile bank with three key selling points enabled by FinTech. Firstly, customer service is provided by an AI-driven Virtual Assistant (through partnership with US-based FinTech company Kasisto), secondly, it provides an financial management tool for customers (using Singapore-based MoneyThor), and thirdly, it offers enhanced security in mobile authentication and transactions (through Singapore-based V-Key). In 2017, Digibank was launched in Indonesia with the same selling points, and also leveraging on a government biometric program that enabled accounts to be opened with a fingerprint for identity verification and enhanced security. DBS Digibank is only available in India and Indonesia, not in the home market of Singapore or elsewhere in the region. This points to the careful manner in which FinTech is being adopted for very specific goals of geographical expansion that is highly targeted to key market characteristics of those economies. In its home market in Singapore and elsewhere in the region, DBS is engaging with other FinTech companies for SME loans and other services, such as in accounting.

Another key dimension of DBS’ engagement with FinTech is through its accelerator program, which has evolved over time with changing views about how investments in FinTech could provide better value for the bank and its clients. DBS Hotspot was started in 2015 as an

intensive 3-month program, aimed at very early start-ups, to cultivate entrepreneurship in Singapore. The program offered participants workspace, access to industry mentors including angel investors and DBS executives, as well several entrepreneur awards worth SGD\$25,000 each (USD\$18,500). After monitoring the outcome of the accelerator program for a few years, DBS Hotspot was restructured into DBS Xchange in 2018 and launched in Singapore and Hong Kong, which are the two biggest financial centers and prominent FinTech hubs in Asia. This followed observations and reports that suggested accelerators and incubator programs have limited success with FinTech companies (Fintechnews Singapore, 2018). DBS Xchange is more specific in targeting four key areas of technology, namely AI, data science, immersive media and the Internet of Things (IoT). Unlike an accelerator program that offers funding and more general mentorship, DBS Xchange operates more specifically as a matching service targeted at DBS internal units and the bank's corporate clients, to help them find the right FinTech solutions from the pool of companies in DBS Xchange. The evolution of DBS Hotspot into DBS Xchange demonstrates how a bank's strategy could change from being broad and tentative and becoming more selective and targeted as the bank identifies specific product segments, markets and clients that could benefit from closer engagement with FinTech products and services, and what forms of engagement might be more productive for different clients and business segments.

Case study 2: RBS – Protecting market share

The Royal Bank of Scotland (RBS), based in the UK, is the retail banking arm of the Royal Bank of Scotland Group, which includes NatWest and Ulster Bank. At first glance, RBS' engagement with FinTech firms appears to be broader and more substantive compared to DBS. However, a closer examination of its FinTech relationships and digital banking operations reveals the selective and tentative nature of such engagements. Rather than establishing a digital banking arm under its own brand name, RBS has set up three standalone digital banks in the UK each with different foci (Figure 4). Esme, launched in 2017, is a digital lending platform targeted at the SME customers of NatWest; Mettle, launched in 2018, provides current account services for small businesses and offers mobile phone-based means of managing invoices and expenses; Bo, to be launched in late 2019, is to become RBS/NatWest's digital consumer bank with a new mobile platform that will offer savings and deposits products to retail customers. Although Mettle shares some staff with RBS, it operates independently in terms of forming partnerships and acquisitions with other FinTech firms. Esme and Mettle also

benefit from being linked to RBS main banking systems for compliance needs, but they operate separate back offices, which are based on cloud computing and are therefore not tied to the bank's legacy IT system. "The philosophy is one of facilitating front- and back-office experimentation, unencumbered by the legacy IT systems, and with a venture capital-like approach that drip-feeds funding to the projects" (O'Neill, 2018).

*** **Figure 4.** Financial ecologies of RBS and its digital banks (Mettle, Esme and Bo), with other FinTech firms. (Source: Author) ***

By setting up three digital banks with different specialization, RBS is able to experiment with new technologies and be agile in addressing consumer needs, while retaining control over its existing banking systems and databases. Without being encumbered by the bank's legacy systems, "new features would be added [to Mettle] over time in response to customer priorities, with its new platform allowing it to develop and deploy new products more quickly than in the past" (Megaw, 2018). Having spent much of the last decade recovering from the 2008 global financial crisis and focusing on bank restructuring after government bailout, RBS has since prioritized technological investment after returning to profit. The overall plan is to digitize and restructure the bank with £1.5bn committed over next two years. As it modernizes its existing IT system, which would take time, RBS is protecting its market share in the retail and SME banking by experimenting with standalone digital banks like Mettle and Bo.

This strategy of standalone digital banks also enables Mettle, Esme and Bo to have greater flexibility in engaging with various FinTech firms for new technologies and platforms that would improve financial services and customer experience for their specific clientele (be they SMEs or retail banking clients). They are making direct acquisitions of other FinTech companies, such as Mettle's acquisition of FreeAgent (providing cloud-based accounting software, which in turn acquired 60mo for data analytics and forecasting services), and Bo's 25% stake in Loot (a digital current account and money management app targeted at students and millennials), who is partnered with the payments giant Wirecard. These acquisitions and partnerships also point to the evolving nature of relationships between banks and FinTech firms and also amongst FinTech firms themselves as they seek new rounds of investments, partnerships and mergers & acquisitions in order to scale up operations, access more customers

or cash out (which is a priority of many startup firms). Labels such as ‘challenger banks’ or ‘disruptors’ are quite fluid as competitive relationships could also evolve into partnerships. For example, although Bo is said to be pitched as a rival to a number of other UK challenger banks, including Monzo, Revolut and Starling Bank, Bo itself also partners with Starling Bank in order to access a wide array of APIs to plug into (see Figure 4), and in doing so expand its suite of products and services.

While the case of RBS and the creation of standalone digital banks show how collaboration between banks and FinTech firms could result in new firm formation and organizational forms, it also illustrates some broader macro trends driven by FinTech in the form of new financial practices that are driven by user-data and based on mobile platforms. Instead of the batch processing and monthly updates familiar with traditional banks, the speed and accessibility introduced by FinTech firms has placed considerable pressure on banks to provide real-time updates, proactive alerts and customised solutions, especially when consumers have become used to managing ever more dimensions of their daily lives via digital apps and mobile platforms. Digital banks such as Mettle, Esme and Bo are arguably better positioned to provide highly personalized and customized solutions similar to what many consumers already experience with technology-based firms such as Google and Amazon.

Conclusion

In examining the ways in which FinTech firms and services are reshaping the intermediation function of banks and ways in which financial institutions have engaged with FinTech firms, this chapter has questioned the positioning of banks as ‘incumbents’ vis-à-vis FinTech firms as ‘disruptors’ in the financial services industry. While banks have well established footholds on various segments of retail and corporate financial services and large customer base, they are facing increasing competition from FinTech firms. The latter, consisting of both large technology firms as well as small start-ups, are seen as non-financial companies entering into financial services provision and having competitive advantages through particularly innovative technologies, data analytics or customer information from other sources. Be that as it may, setting up banks and FinTech firms as direct competitors, as ‘incumbents’ versus ‘disruptors’, overly simplifies their roles and positions in the rapidly changing financial services industry. So far, what we have mostly observed from the industry is that of FinTech products and

services being enrolled into existing bank offerings, as complementary products, rather than FinTech firms completely replacing or substituting existing financial services.

Banks are also transforming themselves by incorporating new technologies (often through partnerships with or acquisitions of FinTech firms) and creating separate digital finance entities in order to experiment with new product offerings and systems management without being encumbered by existing banking legacy systems, which are very secure but difficult to collaborate with new platforms and technologies emerging from the FinTech space. As such, APIs are particularly useful and attractive channels through which banks and FinTech firms could draw on their respective advantages and overcome their own limitations in order to reach more customers and improve overall financial services offerings. As Open Banking and open API requirements are implemented in the UK in 2018 and Australia in 2019, these create further opportunities to observe industry response and whether different types of banks would be better positioned to benefit from such requirements.

Open banking requirements allow customers to more easily compare the offerings and results of different financial providers, and with open APIs customers can readily share their financial information with other providers, if they choose to do so, and make it much easier to transfer accounts, manage payments, and conduct transactions when changing from one bank to other banks and non-bank institutions. On the one hand, smaller banks and cooperatives are seen to potentially benefit from Open Banking as they are less encumbered with clunky legacy systems like the big banks and could make use of APIs to offer a wider array of financial services to a broader range of customers. On the other hand, big banks have more resources to fund investments into new technologies and divisions, or create new subsidiaries that could then later scale up new FinTech applications for greater market impact and returns. Banks are engaging with FinTech in various ways, ranging from aggressive launching of own digital banks to more tentative partnerships and diversification into a broader range of business information and lifestyle services in order to meet changing consumer demands. The cases of DBS and RBS demonstrate how banks engage with FinTech in selective and variegated ways in order to pursue particular goals, which could be about expansion into new product or geographical markets or to protect existing markets from the encroachment of new challenger banks.

This chapter has highlighted the value of using a financial ecologies approach (Lai, 2016, Langley and Leyshon, 2017a) to analyze changing roles and practices of different banks and FinTech firms, trace the emergence of new relationships and networks, and examine broader shifts in the market for financial products and business services. In the context of FinTech, the financial services industry can be studied as a coalition of smaller constitutive ecologies, with distinctive groupings of financial/technological knowledge and practices emerging in different places, with uneven connectivity and material outcomes. Such ecologies are constantly open to new elements, broken alliances and reconstitutions. DBS, for instance, changed its FinTech strategy from an accelerator (DBS Hotspot) to a more targeted ‘matchmaking’ service (DBS Xchange) based on the success rates of FinTech firms in its own accelerator programs and elsewhere. Bo is supposed to help RBS in its retail banking strategy by targeting retail banking customers with online current accounts and financial management tools; at the time of writing, however, Loot (in which RBS has a 25 percent stake through Bo) has gone into administration after it failed to secure further financial backing, which has raised questions regarding how that might affect RBS strategy of developing its own digital banks to fend off FinTech rivals such as Monzo and Revolut (Megaw, 2019). Qualitative field research is needed to investigate the nature of such partnerships and investments, how key actors bargain in such relationships, and the ways in which expectations and outcomes are managed from the perspectives of banks and FinTech firms, as well as negotiations with state actors in reconfiguring spaces of finance vis-à-vis technology in new regulatory frameworks. Taking a financial ecologies approach to examine the changing intermediary function of banks could bring new insights into issues of power in economic processes and the nature of inter-firm and inter-industry networks in global finance.

As seen in the above case studies, different market conditions and regulatory environments, (such as whether there is a large segment of unbanked population or whether a mature banking market means greater competition for digital challenger banks) present different opportunities and limitations for banks and FinTech firms in the provision of financial products and services. The partnerships and acquisitions of FinTech firms also seem to display a certain home market bias in terms of concentration in Singapore for DBS and in London and Edinburgh by RBS. This chimes with a certain ‘sticky’ quality associated with financial ecologies, which could preserve existing relationships or processes, or might generate new momentum when new

pathways are set into motion. Does that reflect certain spatial tendencies of knowledge and business networks in banking-FinTech relationships? While there has been a lot written about the agglomeration of financial services and firms in financial centers, and of technology firms in science parks and high-tech clusters, how might FinTech change existing clusters and network patterns? These raise further questions for financial geographers interested in how FinTech might change existing understandings of the roles of banks and financial institutions, the nature of financial innovation, and key considerations for financial center development in the future.

References

- ARNOLD, M. (2018) 'Five ways banks are responding to the fintech threat', *Financial Times*, <https://www.ft.com/content/d0ab6b84-c183-11e8-84cd-9e601db069b8>. [Accessed 15 May 2019].
- CAROLAN, M. (2019) 'Capitalizing on financing ecologies: The world making properties of peer-to-peer lending through everyday entrepreneurship', *Geoforum*, 102: 17-26.
- DUNCOMBE, R. & BOATENG, R. (2009) 'Mobile Phones and Financial Services in Developing Countries: A Review of Concepts, Methods, Issues, Evidence and Future Research Directions', *Third World Quarterly*, 30(7): 1237-1258.
- FINTECHNEWS SINGAPORE (2018) 'Accelerators Aren't Helping Fintechs, So DBS Banks On Problem Matchmaking Instead', *Fintechnews Singapore*, <http://fintechnews.sg/25396/ai/dbs-bank-startup-fintech-startup-xchange-match/> [Accessed 15 May 2019].
- HENDRIKSE, R., BASSENS, D. & VAN MEETEREN, M. (2018) 'The Appleization of finance: Charting incumbent finance's embrace of FinTech', *Finance and Society*, 4(2): 159-180.
- HUSSAIN, N. Z. (2017) 'CYBG bets on fintech as open banking looms', <https://www.reuters.com/article/uk-cybg-results/cybg-bets-on-fintech-as-open-banking-looms-idUKKBN1DL0L2> [Accessed 15 May 2019].
- LAI, K. P. Y. (2016) 'Financial advisors, financial ecologies and the variegated financialisation of everyday investors', *Transactions of the Institute of British Geographers*, 41(1): 27-40.
- LAI, K. P. Y. & DANIELS, J. A. (2017) 'Financialisation of Singaporean banks and the production of variegated financial capitalism', in CHRISTOPHERS, B., LEYSHON,

- A. & MANN, G. (eds.) *Money and Finance After the Crisis: Critical Thinking for Uncertain Times*. United Kingdom: Wiley-Blackwell, pp. 217-244.
- LAI, K. P. Y. & TAN, C. H. (2016) ‘“Neighbours First, Bankers Second”: Mobilising financial citizenship in Singapore’, *Geoforum*, 64: 65-77.
- LANGLEY, P. & LEYSHON, A. (2017a) ‘Capitalizing on the crowd: The monetary and financial ecologies of crowdfunding’, *Environment and Planning A: Economy and Space*, 49(5): 1019-1039.
- LANGLEY, P. & LEYSHON, A. (2017b) ‘Platform capitalism: the intermediation and capitalization of digital economic circulation’, *Finance and Society*, 3(1): 11-31.
- LOOMIS, J. M. (2018) ‘Rescaling and reframing poverty: Financial coaching and the pedagogical spaces of financial inclusion in Boston, Massachusetts’, *Geoforum*, 95: 143-152.
- MEGAW, N. (2018) ‘Royal Bank of Scotland to launch digital bank for SMEs’, *Financial Times*, <https://www.ft.com/content/fbb6d92c-e108-11e8-a6e5-792428919cee> [Accessed 15 May 2019].
- MEGAW, N. (2019) ‘RBS-backed fintech Loot enters administration’, *Financial Times*, <https://www.ft.com/content/5ed36cce-7c99-11e9-81d2-f785092ab560> [Accessed 31 May 2019].
- O’NEILL, D. (2018) ‘RBS kicks off wave of digital bank offshoots’, *Euromoney*, <https://www.euromoney.com/article/b1bwpg6gc0zflw/rbs-kicks-off-wave-of-digital-bank-offshoots> [Accessed 30 May 2019].
- ROSENMAN, E. (2019) ‘The geographies of social finance: Poverty regulation through the ‘invisible heart’ of markets’, *Progress in Human Geography*, 43 (1): 141–162.
- ROY, A. (2010) *Poverty capital: Microfinance and the making of development*, London, Routledge.
- THE ECONOMIST (2015) ‘The fintech revolution’, *The Economist*, <https://www.economist.com/leaders/2015/05/09/the-fintech-revolution> [Accessed 15 May 2019].

Figure 1. API connects banking services and FinTech applications to meet customer needs.

(Source: Author)

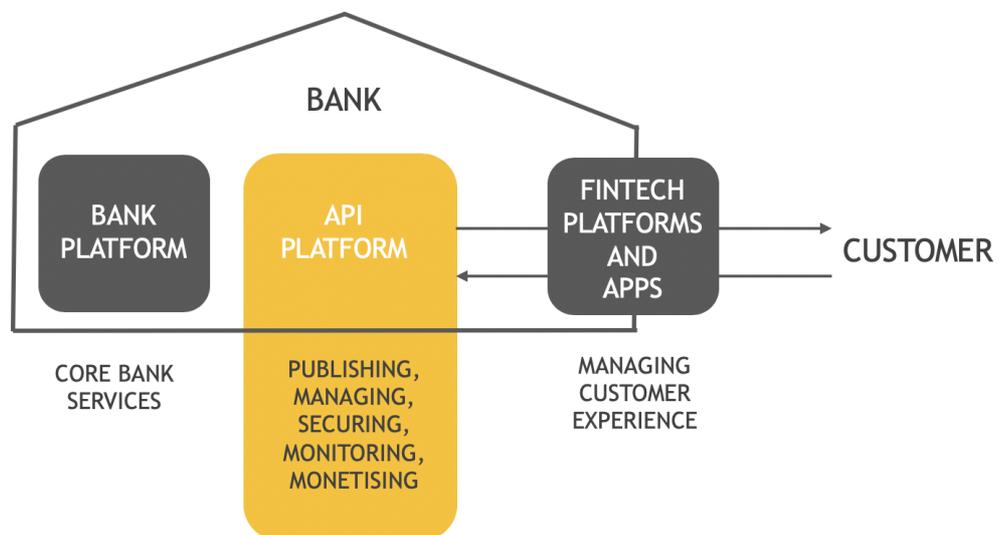


Figure 2a. Different types of API functions (Source: Author)

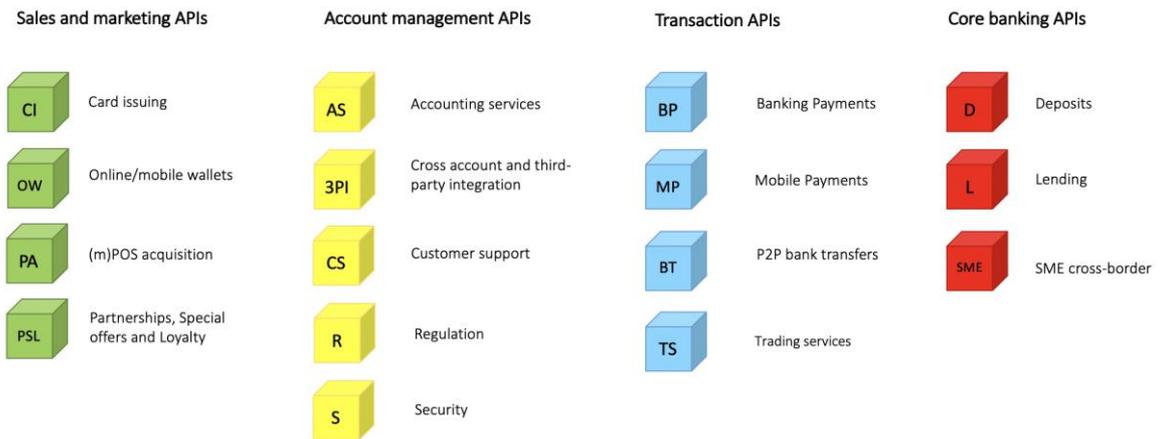


Figure 2b. FinTech firms offer a range of financial products and services by stacking APIs.

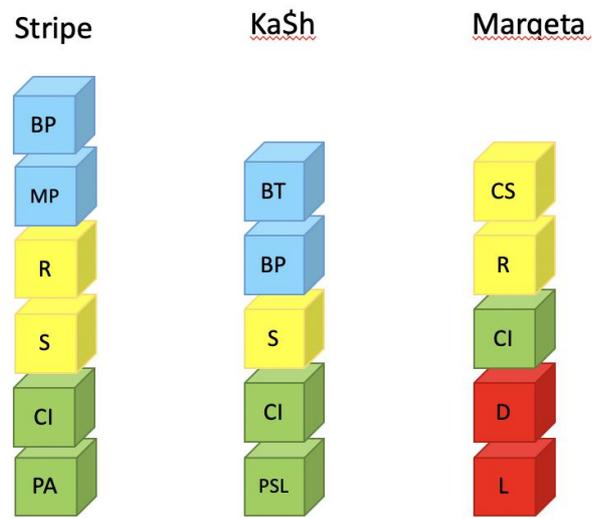


Figure 3. Financial ecologies of DBS, Digibank, DBS Xchange and other FinTech firms
 (Source: Author)

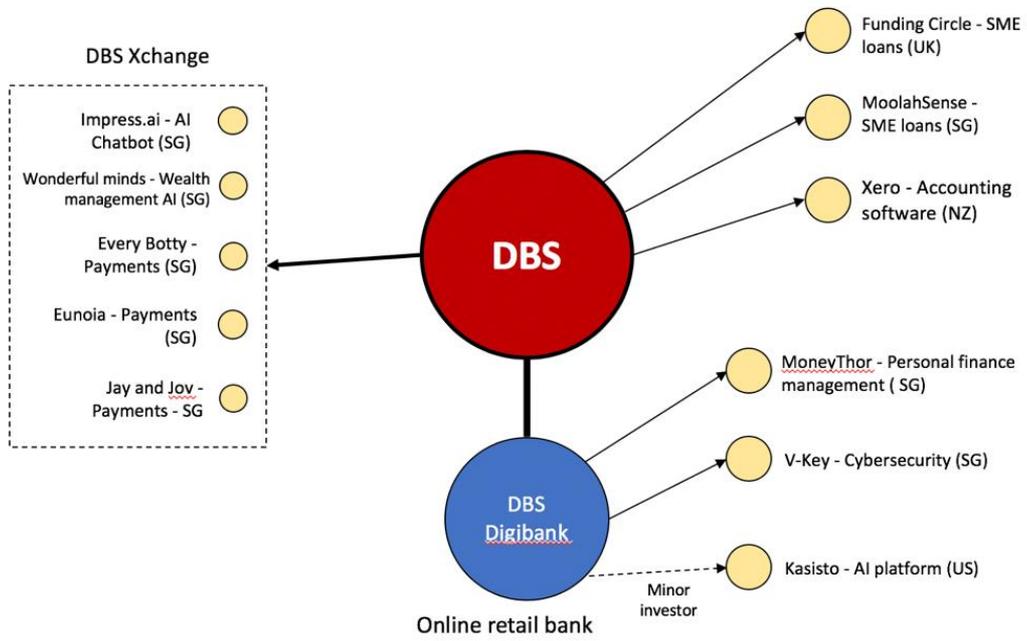


Figure 4. Financial ecologies of RBS and its digital banks, Mettle, Esme and Bo, with other FinTech firms. (Source: Author)

