The platform political economy of FinTech: Reintermediation, consolidation and capitalisation

Journal:	*New Political Economy*
Manuscript ID	CNPE-2020-0011.R1
Manuscript Type:	Original Article

The platform political economy of FinTech: Reintermediation, consolidation and capitalisation

Abstract

'FinTech' is the digital sector of retail money and finance widely proclaimed to be transforming banking in the global North and 'banking the unbanked' in the global South. This paper develops a perspective for critically understanding FinTech as a platform political economy that is marked by three distinctive and related processes: reintermediation, consolidation, and capitalisation. Through experimentation with the platform business model and building on the digital infrastructures and data flows of the broader platform ecosystem, a constellation of organisations – including start-ups, early-career firms, BigTech companies and incumbent banks – are engaged in processes of platform reintermediation. Changing the bases of competition in retail money and financial markets and encouraging oligopoly and even monopoly, the reintermediation processes of FinTech are presently manifest in strong tendencies towards platform consolidation. The imagined potential of FinTech has also triggered intensive processes of capitalisation, with platforms receiving significant prospective investment by venture capital, private equity funds, banks and BigTech firms.

Keywords: FinTech; BigTech; platform capitalism; reintermedation; consolidation; capitalisation.

1. Introduction

'FinTech' is the recognized descriptor for an emergent and diverse sector of digital retail monetary and financial services. It is the object of media hype (e.g. Hancock et al. 2018; Economist 2017), a focus for national financial policymaking and regulation (HM Treasury 2018; National Economic Council 2017; Barainard 2020), and is enthusiastically promoted within global development programmes (e.g. Alliance for Financial Inclusion 2018; World Bank and the International Monetary Fund 2018). FinTech has also generated a burgeoning academic-practitioner literature, emanating mainly from business schools, industry commentators and consultancy firms (e.g. Blakstad and Allen 2018; Delaporte, Price, and Bastid 2016; Gupta and Tham 2018; pwc 2017). Combined, this work maps a rapidly evolving landscape, identifies active business models, and ascertains the challenges that might limit future expansion. Invoking the well-worn Silicon Valley tropes of 'disruption', 'distintermediation' and 'democratisation' that are ubiquitous in digital economy discourse, prevailing and powerful media, policy and academic-practitioner accounts of FinTech typically emphasize how consumer-empowering technological innovations are not only transforming banking in the global North, but also 'banking the unbanked' in the global South.

A rapidly growing body of social science research is exploring the main domains of FinTech business. This work has mainly focused on digital and mobile payments (e.g. Kremers and Brassett 2017; Maurer 2012; O'Dwyer 2015, 2019), cryptocurrencies and distributed ledger technologies (e.g. Golumbia 2016; Tapscott and Tapscott 2016; Parkin 2019), asset management and 'robo-advising' (Haberly et al. 2019), and crowdfunding and peer-to-peer (P2P) lending (Clarke 2019; Gray and Zhang 2017; Langley 2016; Langley and Leyshon 2017). Research is also interrogating the FinTech sector more broadly, making connections with wider-ranging developments, including technological transformations underway across wholesale and retail finance (Bernards and Campbell-Verduyn 2019; Campbell-Verduyn, Goguen, and Porter 2017), and continuity and change in the 'developmental states' of China and East Asia (Gruin 2019; Gruin and Knaack 2019; Rethel and Thurbon 2019). In addition, FinTech is being researched by social scientists concerned with revised global development agendas that prioritise 'financial inclusion' at the 'bottom of the pyramid' (BoP), and which serve to extend the frontiers of neoliberal financialised capitalism in the global South (Aitken 2017; Bernards 2019a, 2019b; Gabor and Brooks 2017; Langevin 2019; Mader 2016, 2018).

Across this research, moreover, social scientists are beginning to offer analytical perspectives that provide a counterpoint to the prevailing and powerful accounts of FinTech. Drawing on critical literature apprehending the global digital economy more broadly, these perspectives presently serve to highlight two facets of FinTech crucial to understanding its dynamics and pathologies. The first is the use of techniques of data aggregation and algorithmic analysis to extract value from users and their data trails (Bernards 2019a, 2019b; Gabor and Brooks 2017; Langevin 2019; O'Dwyer 2015, 2019; Sadowski 2019). Pivotal to the digital economies of 'surveillance capitalism' (Zuboff 2019), data figures strongly but somewhat differently in FinTech. Transaction data produced by digital and mobile payments is aggregated and monetised by FinTech firms, going beyond a revenue model based solely on fees levied on user transactions (Maurer and Swartz 2015). Combined with other contextual data, transaction data is mobilised in retail finance for market segmentation (i.e. classifying customers for advertising and sales purposes) and credit risk analysis (i.e. developing tailored credit products and risk management tools) (O'Dwyer 2019). Indeed, transactional, geo-spatial, telecommunication and social media data are combined by FinTech firms to produce new kinds of 'proxy' credit risk data (Aitken 2017). This is significant, given claims that such proxies can render visible roughly 40 percent of the global adult population (~1.7 billion people) who are currently 'unbanked' and lack credit histories and scores (Realini and Metha 2015; World Bank 2017). Promises of transaction data-derived financial inclusion often garner support in developing countries from state agencies seeking to advance the surveillance and taxation of their populations (Jain and Gabor 2020).

Second, perspectives offered by social scientists stress how the FinTech industry deploys infrastructures of digital technology and wireless telecommunication to connect with users, often in conjunction with longer-standing payment and financial architectures (Bernards and Campbell-Verduyn 2019; O'Dwyer 2019; Maurer 2012). Grandiose and spectacular claims about FinTech are punctured with reference to the mundane and 'backgrounded' operations of assembled socio-technical systems (Bernards and Campbell-Verduyn 2019, 783), and emphasis is placed on the ways in which these infrastructures frame monetary and financial relations to create new opportunities and vulnerabilities for users (e.g. Rodima-Taylor and Grimes 2019). Indeed, Clarke (2019, 866) draws attention to the tendency for governmental programmes to present the kinds of financial service products now offered by FinTech as 'part of the basic "infrastructures" of contemporary societies'. Justifying the development of products for marginal customers, this discourse also makes it possible for the FinTech sector to 'profit at the expense of people who become increasingly indebted' (*ibid*).

This paper aims to extend existing social science research by developing a perspective for critically understanding FinTech as a *platform political economy*; that is, as a political economy which is always already constituted through the logics and logistics of platforms (Guyer 2016). In doing so, we will broadly situate the understanding of FinTech within analyses of the global digital economy as a 'platform economy' (Bratton 2015; Kenney and Zysman 2018, 2020; van Dijck, Poell, and De Waal 2019) and as 'platform capitalism' (Srnicek 2016; Pasquale 2016; Sadowski 2020). Although the notion of 'platform' is certainly present in social science research on FinTech (e.g. Clarke 2019; Maurer 2015; O'Dwyer 2019), it rarely provides the conceptual entry point (cf. Hendrikse, Bassens, and Van Meeteren 2018). As Haberly et al. (2019, 168) observe in their study of asset management as one line of FinTech business, 'for all of the analyses of the impact of new technologies in finance; and of the digital platform economy outside of finance; there has not been a systematic evaluation of the impact of the digital platform model'. Here we develop a perspective for understanding the political economy of FinTech as produced by organisational leverage of 'the platform' in retail money and finance. This perspective is directly informed by our wider work that – by combining insights from heterodox political economy, cultural economy and science and technology studies (STS) – theorises 'platform capitalism' as the rise of a distinctive and powerful mode of capitalist intermediation made possible by a host of socio-technical achievements (Langley and Leyshon 2017b). It thereby emphasises experimentation with the platform business model underway throughout the FinTech sector, a model of capitalist enterprise that brings together relatively well-established economic and socio-technical practices to create a new intermediary logic of data-rich accumulation. It also stresses how the political economy of FinTech operates through 'the stack', a logistical assemblage of digital infrastructures and data flows that is enclosed and controlled by BigTech platforms and which broadly comprises the 'platform ecosystem' (Bratton 2015; van Dijck, Poell, and De Waal 2019).

Understanding FinTech as a platform political economy serves to foreground its commercial and institutional configuration, and thereby re-orientates critical analysis of the constitutive role of data and digital infrastructures in its operations. Analysed from this perspective, we will also show how FinTech is marked by processes of platform political economy that confound evangelical claims that it disintermediates, disrupts and democratises retail money and finance. We identify and elaborate upon the distinct and related processes of reintermediation, consolidation and capitalisation shaping the FinTech sector and its consequences for retail money and finance, but which currently remain relatively under-researched.

The remainder of the paper is organised into three sections. The first introduces FinTech and further develops our perspective. The second addresses, in turn, the processes of reintermediation, consolidation and capitalisation that are underway in the platform political economy of FinTech. Our conceptual and analytical intervention intends to provoke further, in-depth research into the strategies and practices of FinTech platforms. Our method here is therefore to interrogate media, policy and academic-practitioner accounts of FinTech and the platform economy that provide for the business knowledge of FinTech platforms. The third and final part of the paper offers some concluding reflections.

2. Understanding FinTech

The portmanteau of 'FinTech' originates from a project called 'Financial Services Technology Consortium' started by Citigroup in the early 1990s. Today, in its broadest applications, the term draws attention to the role of information technologies in global wholesale and retail finance since at least the nineteenth-century (e.g. Buckley, Arner, and Barberis 2016). FinTech is normally applied more narrowly, referring to technological changes underway in retail finance since the 1950s (Rubini 2017, 2-3), and especially the emergence of a distinct sector of retail money and finance after the 2008 global financial crisis (e.g. Blakstad and Allen 2018, 4). Largely based around telecommunication and digital technologies and 'big data', the contemporary FinTech sector is accessed by users through mobile networks and smartphone applications linked to cloud computing.

FinTech is also often categorised into several more-or-less discrete digital retail monetary and financial services. Book-length introductions, for example, often feature chapters dedicated to each category of services (e.g. Flynt 2016), which typically also appears as inseperable from a particular 'group of companies that are introducing innovation into financial services through the use of modern technologies' (Rubini 2017, 1). As the United Kingdom's

HM Treasury (2018, 3) puts it, 'The term "FinTech" is used interchangeably to describe both technology-driven innovation across financial services and to pick out a specific group of firms that combine innovative business models with technology to enable, enhance, and disrupt the financial services sector'. Narrated in these terms, FinTech includes: online and mobile monetary payments denominated in sovereign currencies (e.g. PayPal, Braintree); bitcoin and other cryptocurrency exchanges (e.g. Bitpay, Coinbase); online-only banks and banking apps (e.g. Atom, Monzo); crowdfunding (e.g. Kickstarter, Crowdfunder) and peer-to-peer (P2P) lending (e.g. Zopa, Lending Club); investment, saving and financial planning, such as 'robo-advisors' (e.g. Wealthfront, Betterment), automated saving apps (e.g. Digit, Dyme), and interfaces and dashboards for money management (e.g. Mint, Money Dashboard); and, online lending to different and differentiated market segments, such as small- and medium-sized businesses (SMEs) (e.g. Kabbage, OnDeck), low- or high-risk consumers (e.g. LendUp, Borro), and payday borrowers (e.g. SafetyNet). An array of business-to-business (B2B) FinTech firms also service the industry, concentrating on data aggregation and algorithmic analytics (e.g. Cignifi, DemystData), applications of blockchain and other distributed ledger technologies (e.g. Peernova, Mirror), and user experience (UX) and user interface (UI) design (e.g. UXDA).

2.1 'The platform'

Specialist and ostensibly innovative FinTech firms are *platforms*; that is, they largely correspond to a distinct mode of capitalist enterprise that aggregates and analyses data and deploys digital infrastructures in order to extract value from intermediation. Paraphrasing from Wood and Monahan's (2019, 1) account of the difference between 'platform surveillance' and 'surveillance capitalism' (cf. Zuboff 2019), our point is not just that FinTech (like contemporary surveillance) 'happens to be facilitated by platforms'. Rather, over the last decade or so, the political economy of FinTech has been fuelled by the *ex poste* rationalisation of 'the platform' as *the* business model for the global digital economy (Langley and Leyshon 2017b, 20-23). It is through this model that 'more sectors, firms, startups, app developers, and investors mobilize' around 'one plausible version of information capitalism' (Zuboff 2019: location 256 [Kindle edition]). As leading advocates of the platform business model Parker, Van Alstyne and Choudary (2016, 278) put it, 'the bankers have heard the message that is spreading through one industry after another', and, across the FinTech sector, 'they are looking to the platform model as the chief disruptive mechanism'.

During the dot.com boom of the 1990s, platform enterprises (e.g. social media companies, online market exchanges) often developed without a clear commercial rationale (Feng et al. 2001; van Dijck 2013; Kenney and Zysman 2020). In contrast, the FinTech sector has gained traction amidst burgeoning business knowledge and 'how to' guides about the platform model, not to mention the backing the model has received from venture capital and other investors (see below). Key features of the model include, for example: so-called socio-technical 'layers' (infrastructure, data, users) (Choudary 2015); the potential to rapidly 'scale up' to market dominance with limited investment in fixed capital and other assets (Parker, Van Alstyne, and Choudary 2016; Kenney and Zysman 2018); and, promising revenue strategies which increasingly centre on value extraction from monetising combinations of user data with "platform ready" external web data (Helmond 2015).

Within FinTech, firms specialising in payments and crowdfunding and P2P lending correspond particularly strongly with the platform business model: they intermediate multi-sided 'connections' and relations between users and coordinate the network effects of 'connectivity' (Srnicek 2016, 45). Start-ups providing online-only banking, investment, financial planning or loans, meanwhile, are typically business-to-consumer (B2C) platforms, or two-sided aggregator platforms that connect users with product and service providers (e.g.

banks, non-bank lenders) that partner with the platform. While rates of formation appear to have slowed somewhat in North America and Europe, by December 2019, Crunchbase, a widely recognised industry database, recorded a global population of over 13,000 FinTech platforms.

Platform business experiments in FinTech extend beyond start-ups and early-career firms. Incumbent institutions in both the information and telecommunications (ICTs) and financial services industries are also leveraging the platform business model. Major incumbent banks in the global North are now significant actors, 'seeking combinations of old and new business models' to reinvent their internal data systems and online business channels (Hendrikse, Bassens, and Van Meeteren 2018, 161). Banks are integrating legacy hardware and software systems into platforms. This may be geared towards 'open innovation' and 'ecosystem' approaches that, facilitated by Application Programmable Interfaces (APIs) and characteristic of the Apple business model, centre on FinTech firms harvesting data and building applications on bank platforms (Hendrikse, Bassens, and Van Meeteren 2018). Indeed, such an approach is being encouraged by 'open banking' regulations in the European Union and UK in particular (Efra 2019). To enable their in-house change programmes, however, banks are strategically engaging with FinTech start-ups in other ways, including partnerships, minority investments, and acquisitions.

2.2 BigTech and the platform ecosystem

BigTech companies now also offer FinTech platforms to their users, and/or have formed separate FinTech business arms or made investments in FinTech partners (Moeller 2018). This includes the 'Big Four' of Google (Alphabet), Apple, Facebook and Amazon (GAFA) in the global North (Galloway 2017), and Baidu, Alibaba and Tencent (BAT) in

China. The GAFA BigTechs all offer payment platforms to their users, for example, such as Google Pay, Apple Pay and Amazon Pay, while 1.5 billion Facebook users can make payments via Messenger. Meanwhile, the growth of FinTech in China has been largely driven by the expansionary strategies of BAT (Economist 2017; Wang and Doan 2018). Indeed, the FinTech platforms of Alibaba and Tencent are arguably the most significant globally. Chinese consumers top EY's (2019) Global FinTech Adoption Index, and mobile payment transactions by value ($790 billion) in China in 2016 were 11 times greater than in the United States (Smith 2018). In 2014, Alibaba consolidated its FinTech operations into a spin-off company, Ant Financial, which operates China's most popular mobile payment platform (Alipay), and offers a host of digital banking, investment, lending and insurance services. Meanwhile, Tencent's WeChat messaging app offers a range of transfer and payment functions to its 890 million users (Chandler 2017).

The FinTech sector is also reliant, more broadly, on telecommunication and digital infrastructures that are largely enclosed and controlled by telecom giants and BigTech platforms (O'Dwyer 2015; Sadowski 2020). FinTech in Africa is, for example, increasingly running on the telecommunication systems and 'feature phones' of Chinese corporations (Pilling 2019). In the global North, meanwhile, FinTech is a platform political economy made possible by the integration and operation of the six layers of what Bratton (2015) describes as *The Stack* (i.e. '*Earth*', '*Cloud*', '*City*', '*Address*', '*Interface*', '*User*'). For a number of emergent digital economy sectors – news media, urban transportation, healthcare, and education – GAFA and BAT have evolved into the 'infrastructural platforms' of 'the platform ecosystem' (van Dijck, Poell, and De Waal 2019). BigTech, in short, provides the highly centralised infrastructures upon which the 'sectoral platforms' of FinTech are built and organised.

For specialist FinTech platforms, hardware and software have increasingly become fixed costs rather than capital investments (Kenney and Zysman 2018). Combined with the B2B 'off-the-shelf' services of white label platform providers and UX and UI designers, this has significantly lowered the barriers to market entry for start-ups. Accordingly, FinTech platforms are often described as 'tech stacks' (e.g. Gupta and Tham 2018), integrated assemblages of infrastructural elements drawn from the platform ecosystem. The 'back-end' of the tech stack of FinTech platforms is what makes an app or a website run. Invisible to users, it includes cloud computing services (e.g. Amazon Web Services (AWS), Alibaba Cloud) and data analytics (e.g. Google Analytics), which can be combined and purchased from a single BigTech provider (e.g. Microsoft Azure and Microsoft Azure Data Analytics). Search engines, app stores, and identification services taken from the platform ecosystem are also critical to Fintech platforms. Meanwhile, the apps and interfaces that comprise the 'front-end' of the tech stack of FinTech platforms utilise Java or CSS programming code, often compiled from open source repositories maintained by BigTech (e.g. Bootstrap, AngularJS, ReactJS, Materialize). BigTech companies are important to the political economy of FinTech as platform providers of retail monetary and finance services, then, but the constitutive significance of the BigTech platform ecosystem to the FinTech sector goes much, much deeper.

3. Processes of platform political economy

Foregrounding the platform business model and platform ecosystem is key to a perspective that explicitly attends to the political-economic dynamics of FinTech. A perspective that understands FinTech as a platform political economy can also draw attention to processes of reintermediation, consolidation, and capitalisation. These processes are yet to feature strongly in social science research, even though they are presently shaping the development of the FinTech sector and its consequences for retail money and finance.

3.1 Platform reintermediation

In the global North, FinTech is widely held to be 'disintermediating' retail money and finance. Taken to its conclusion, this could render banking intermediaries as mere clearing houses for business undertaken elsewhere (Joyce 2019) . Consider, for example, Blackstad and Allen's (2018, 4-9) account of what they call the *FinTech Revolution*. Prior to the global financial crisis, a 'bloated' corporate banking industry dominated retail finance and paid little attention to consumers. However, chastened by the crisis and emboldened by participation in the wider digital economy, consumers demanded 'greater transparency and accountability' in financial services and 'a fragmented, app-based and partially gamified interface with their service providers'. In this rendition of the distintermediation narrative, banking intermediation is rendered outmoded by consumers, and the emergence of FinTech platforms as the new intermediaries of retail money and finance is obscured.

A core feature of the platform business model is the intermediation of multi- and two-sided markets (Gawer 2014). Start-ups, BigTechs, banks and other incumbent institutions experimenting with this model in the FinTech sector are seeking to 'reintermediate' (not disintermediate) retail monetary and financial relations. Financial intermediation typically entails the reduction of transaction and/or information costs (type 1) and the creation of liquidity (type 2), and attempts at transformation are better understood as acts of reintermedation rather than disintermedation (French and Leyshon 2004). Contemporary platform reintermediation by FinTech firms primarily centres on type 1 forms of intermediation, but as firms scale they are also able to undertake type 2 intermediation. Indeed, what Erturk and Solari (2007) describe as the 'reinvention' of retail banking from the 1980s – with fees and charges for products and services overtaking earnings from interest rate spreads – actually provides the favourable institutional, social and economic conditions of possibility for platform reintermediation. Fees and charges have increasingly become a core source of banking revenues, accounting for 65 percent of after-tax-profits in global retail banking in 2016 (McKinsey 2016). As FinTechs undertake platform reintermediation, they are partly taking their cue from a transformation in which the formerly vertically integrated retail financial services of banks have already been unbundled (and re-bundled) to generate product sales.

Viewed against the backdrop of the longer standing reintermediation of retail money and finance, the processes of FinTech platform reintermediation are distinctive nonetheless. For so-called 'unbanked' populations of 'financial nomads' in the global South (Realini and Metha 2015), FinTech enterprises might appear to deliver financial inclusion by providing users with monetary and financial services for the first time. Here, however, platform reintermediation actually displaces and transforms informal (i.e. non-market) monetary and financial relations (O'Dwyer 2015; Rodima-Taylor and Grimes 2019). In the global North, where incumbent banks are continuing to shrink branch networks in favor of online 'business channels' (Tiessen 2015), platform reintermediation by online-only and app-based banks certainly includes promises of ease of access and reduced transaction costs. But when online banking is the new normal, FinTech reintermediation is also as much about engineering 'frictionless' platform infrastructures for more effective and appealing user transactions – so-called UX and UI design – as it is about offering lower fees and charges or better interest rates than the major banks (Ash et al. 2018) .

FinTech platform reintermediation also represents a departure from reintermedation processes centred on information costs. Platforms play a similar informational role to banks and non-banking financial intermediaries in the global North when they charge fees, for example, for establishing the trust necessary to process a payment between users, conducting basic due diligence on the SMEs that they list for P2P loans, and assessing the creditworthiness of consumers for loans financed by their partners. However, platform reintermedation is not merely a matter of extracting 'direct rent' in the form of fees and charges, but also turns on extracting 'indirect rent' by accruing user data and combining and analysing it with metadata (O'Dwyer 2015; Sadowski 2020). The role of information in intermediation is transformed when it is regarded as data and as a resource and source of value, not as a cost to others that is reduced and managed (for a fee or charge) on their behalf. This novel data-driven and data-derived feature of platform reintermedation is pronounced in mobile and digital payments, where business models increasingly concentrate on the monetisation of transactions data to be used or sold for supply chain operations, market segmentation and/or credit risk analysis (O'Dwyer 2019). But data-derived reintermedation by platforms elsewhere in the FinTech sector – from robo-advice on investment portfolios to loans to consumers excluded or underserved by incumbent institutions – is also variously grounded in claims to discover consumer needs, offer better tailored products, and provide for improved analysis of credit risks.

3.2 Platform consolidation

It is often claimed that FinTech 'new market entrants' are 'disrupting' the dominance of banks and other incumbent providers, increasing competition in retail monetary and financial services in the global North (e.g. Flynt 2016). Developments in the US market for personal loans would seem to support these claims, for example (Siegfried 2019). For policymakers and regulators in the global North confronted by 'too big to fail' incumbents, FinTech represents an opportunity to increase competition in financial services. In the UK, for example, HM Treasury (2018, 2-3) considers Fintech to be 'a fantastic example of how competition can be a force for good', where 'government, and regulators, have an important role to play in removing barriers to entry and growth, particularly for innovative firms'. If harnessed correctly to maintain 'consumer safety' (Brainard 2020), regulators hope FinTech disruption could deliver renewed competitiveness to retail markets for money and finance.

From a platform political economy perspective, equating the rise of FinTech with a wave of competition-enhancing disruption in existing markets for retail money and finance is problematic. Processes of consolidation rather than competition characterise FinTech because, fundamentally, successful platform reintermediation turns on transforming and monopolising *new* market structures of retail money and finance. As Parker, Van Alstyne and Choudary (2016, 210 *original emphasis*) argue, competition in platform economies proceeds on the basis that 'firms that understand how platforms work can … *remake* markets, not just *respond* to them'. Crucially, multi-sided platforms must have strong 'demand economies of scale' or 'network effects': for users, the benefits of a platform increase as a function of the total number of users (Cusumano, Gawer, and Yoffie 2019). The primary initial strategic objective for those experimenting with the platform business model in FinTech is thus to rapidly recruit and retain user populations and their data, to 'leverage network effects' by 'scaling up'.

Ultimately, the consequence of these processes could be that FinTech replaces existing retail money and finance markets with newly structured and platformed arrangements that have monopolistic and oligopolistic tendencies. 'BigTech-FinTech' platforms are already acknowledged by some commentators to be the main threat to 'too-big-to-fail' banks (McWaters and Galaski 2017; McKinsey 2016). However, we would caution against assuming that retail money and finance is only a BigTech banking license away from being captured (Delaporte, Price, and Bastid 2016). It is not in the interests of BigTech platforms to fully enter the banking industry due to the level of compliance and political and regulatory oversight that would follow (Moeller 2018). Indeed, amid political unease about the power of large digital platforms, the hostile reaction to Facebook's 2019 plans to create its own cryptocurrency

('Libra') illustrates that BigTech firms may face enhanced scrutiny and concerted political opposition as they seek regulatory approval for new financial products and services.

We would want to stress, then, the variegated processes of FinTech platform consolidation presently underway across different markets and spaces. Centred on and around both BigTech companies and powerful incumbents, these processes of platform consolidation are having considerable impacts on the organisation of retail money and finance. In China, for example, BAT companies dominate FinTech by offering services to their vast populations of digital consumers and social media users. They have taken advantage of the 'unique ability' of platforms 'to link together and consolidate multiple network effects' (Srnicek 2016, 95), rapidly scaling up the FinTech side of their business. Mobile payments provided the bridgehead for the move by Alibaba and Tencent into FinTech, a multi-sided market line of business in which network effects are especially strong. Subsequent expansion has seen the introduction of 'complementary products' to their captured user populations, 'build[ing] up ecosystems of goods and services that close off competitors' (Srnicek 2016, 96). In 2013, for instance, Alibaba launched Yu'ebao, enabling e-shoppers to transfer dormant cash from their payment account on Alipay into a mutual fund investment account with rates of return above those available from bank deposit accounts. By 2017, Yu'ebao had US$165 billion dollars of assets under management (AUM), and had become the world's largest money market mutual fund (Wang and Doan 2018).

FinTech platforms operated by ICT and banking incumbents are also the focal point for processes of consolidation. In Kenya, for example, the transformation of M-Pesa from a mobile payments platform owned by incumbent telecoms giants into 'a platform for financial inclusion' is well underway (Ndung'u 2018: 37). Meanwhile, in North America and Europe in particular, and as we noted above, banks are building on their own economies of scale and scope by experimenting with the platform model. As a result,

> FinTech has evolved from startups that want to take on and beat incumbents, to a broader ecosystem of different businesses looking in many cases for partnerships. FinTech startups don't just need capital, they need customers. At the same time, incumbents need new approaches to drive change and deliver innovation (pwc 2017, 1).

For those articulating business strategies in platform political economies, such partnership-based consolidation is crucial to successfully reintermediating and transforming markets. As Parker, Alstyne and Choudary (2016, 211) put it, a platform enterprise 'no longer needs to seize every opportunity on its own' and 'can purse only the best opportunities while helping ecosystem partners seize the others'. pwc (2017) found that globally, by 2017, 45 percent of banks had partnerships with FinTech firms, up from 32 percent in 2016, while 82 percent of incumbents surveyed stated that they would be increasing their links to FinTechs.

3.3. Platform capitalisation

A further and related process of platform political economy is also shaping the development of the FinTech sector and its consequences for retail monetary and financial order. A significant and integral feature of platform capitalism is that digital platforms are highly capitalised by investors (Kenney and Zysman 2018; Langley and Leyshon 2017b; Srnicek 2016). During the decade or so between the global financial crisis and the present financial dislocations of the Covid-19 pandemic, platform capitalisation took place in a low interest-rate and unconventional monetary policy environment which was manifest, more broadly, in rising corporate indebtedness and increased investor appetite for risk (IMF 2019). Cheap money and risk-embracing investors were drawn to platforms by the relatively coherent and powerful framing of the future possibilities of the global digital economy provided by the platform business model, and the demonstration of 'powerful platform effects' on existing market structures by BigTech giants (Waters, Kuchler, and Bradshaw 2018).

Processes of platform capitalisation have been extensive in FinTech. Relative to other emerging digital economic sectors, FinTech appears to be particularly conducive to the progressive promises of new technology and the application of big data analytics (e.g. advanced machine learning) (cf. Geiger 2019; Rubini 2017). FinTech also seems to have especially promising revenue prospects, not least because of retrenchment by re-regulated retail banks during the recent decade (Christophers, Leyshon, and Mann 2017) Currently, the FinTech sector accounts for the greatest share of 400 or so 'unicorns': that is, globally, there are more privately-owned FinTech firms valued at over US$1 billion than there are similar firms in any other sector (Stalder and Miller 2018).

Popular and prevailing accounts of FinTech tend to regard the scale of investment in the sector as a kind of vote of confidence, an indication of its likely future success in transforming retail money and finance and 'banking the unbanked'. Rubini (2017, 5), for example, details the boom in investment in FinTech start-ups, such that, from 2015 to 2017, global investment amounted to US$122 billion, with the lion's share in 2017 split roughly equally between the US and Asia (Hardin 2017). The first half of 2018 saw a further US$57.9 billion worth of investment in FinTech. As Rubini (2017, 4) has it, the 'start-ups that received funding are hungry and ambitious and want to disrupt the banking sector'. We would suggest, in contrast, that the capitalisation of FinTech platforms is actually a dynamic and diverse process that is variously intersecting and supporting the processes of platform reintermediation and consolidation.

Globally, VC investment in FinTech platforms has featured successively larger rounds of funding for smaller numbers of firms. Evidenced by the growing number of FinTech unicorns, this is a common feature of the cycle of VC investment because fund portfolios are expected to contain only a minority of investments that will ultimately pay-off after five to 10 years (so-called 'home runs') (Feng et al. 2001). But it is especially pronounced for digital economy firms, as it is widely accepted that their investment costs are likely to be much greater than revenues for longer periods as they attempt to scale up to secure positions of strength in radically restructured markets. Related, private equity and other later-stage investors have become more prominent backers of FinTech firms (Sarch, Kiem, and Ballard 2018). Srnicek (2016, 88) neatly describes the processes that capitalise on the promise of monopolistic and oligopolistic futures for platform reintermediation as 'VC welfare', not least because equity maintains platforms as they seek to establish profitability and overcome incumbents.

Two further features of FinTech platform capitalisation have also sustained the sector in ways that intersect with processes of platform consolidation. First, in contrast with the dot.com era, it has become widely accepted that the so-called 'liquidity event' (when early-stage investment is cashed-out) is not necessarily an IPO. The liquidity event for FinTech start-ups is more likely to be an acquisition, especially by an incumbent financial institution, ICT company or BigTech platform. In 2018, for example, there were eight liquidity events in the US FinTech sector worth over $US100 million, six of which were acquisitions of this kind (Stadler and Miller 2019). Second, in China in particular, it is important to note that a significant share of VC investments in the FinTech sector have not been made by traditional VC funds, but by the Corporate Venture Capital (CVC) arms of BigTechs. BigTech is thus investing in FinTech platforms through CVC, as well as through in-house programs and acquisitions funded via their balance sheets (Waters, Kuchler, and Bradshaw 2018). The rise of CVC is not exclusive to China: CVC funds (such as Google Ventures) account for roughly five percent of total VC investment in the US. But CVC is especially important to Chinese venture investment (Yang 2019), with the CVC arms of Alibaba and Tencent specialising in technology investments and accounting for 40-50 percent of the total (Sender 2018). The

FinTech investments of the CVC arm of Alibaba include, for example, Paytm, the leading payments platform in India.

4. Conclusions

The emergence and growth of FinTech is registering amongst social scientists. A burgeoning body of research has started to offer critical perspectives, challenging the prevailing and powerful imaginaries that presently animate the industry. Such perspectives tend to emphasise how FinTech is constituted through data aggregation and analysis and reliant upon telecommunications and digital technology infrastructures. Our aim in this paper, in contrast, has been to develop a perspective for critically understanding the political-economic dynamics and tendencies of FinTech, a perspective that explicitly specifies how FinTech is constituted as a platform political economy. This is not to deny the undoubted importance of data and infrastructures to the operations of FinTech, but rather to situate these facets of FinTech in the sector's novel and rapidly evolving commercial and institutional settings. Placing the platform business model and platform ecosystem front-and-centre provides for a fresh perspective on the role of data and digital infrastructures in the workings of FinTech. Existing critical research certainly points to the importance of data aggregation and algorithms for the business of FinTech, but the promises and practices of data need to be understood in the context of experimentation with the platform as a model of capitalist intermediary enterprise. Equally, existing research highlights the socio-technical and infrastructural character of FinTech but omits how its 'tech stacks' are built on the platform ecosystem which is largely enclosed and controlled by BigTech.

We certainly hope that the intervention made here will provoke further research into the platform political economy of FinTech, especially in the form of detailed analytical case studies of FinTech platforms. Given the constraints of a paper of this kind, we have necessarily only been able to very briefly discuss a few specific and illustrative examples above. Our intervention may also further encourage and deepen the analysis of the development of platform political economies beyond the FinTech sector, such as the sectors that are the focus for van Dijck, Poell and De Waal (2019) and Fields (2018). Attending to the constitutive significance of the platform business model and platform ecosystem, such research should also be attuned to the distinct and related processes of reintermediation, consolidation and capitalisation that we have shown here to be shaping the FinTech sector and its consequences for retail money and finance. These processes are relatively under-researched by social scientists of FinTech, despite the ways in which they confound the powerful claims to disintermediation, disruption and so on that are usually made on the sector's behalf.

Interrogating specific instantiations of the platform business model and 'tech stacks' built on the platform ecosystem, analytical studies of FinTech platforms also need to pay particular attention to processes of platform political economy. Start-ups and early-career FinTechs, BigTech companies and ICT and banking incumbents alike are all engaged in processes of platform reintermediation. Rather than enhance competition in existing retail money and financial markets, platform reintermediation seeks to produce new market structures that will secure new oligopolistic and monopolistic positions. FinTech enterprises are thereby conducting their business operations amid intense processes of platform consolidation increasingly dominated by BigTech firms and incumbents. Platforms are also in the grip of processes of prospective capitalisation that, over the decade running up to the presently unfolding Covid-19 pandemic at least, have variously selected and sustained those FinTech platforms deemed worthy of further and greater volumes of investment.

References

Aitken, R. 2017. 'All data is credit data': Constituting the unbanked. *Competition & Change* 21 (4):274-300.

Alliance for Financial Inclusion. 2018. Sochi Accord for Financial Inclusion. Kuala Lumpur, Malaysia. https://www.afi-global.org/sites/default/files/publications/2018-09/Sochi_FS18_AW_digital.pdf.

Ash, J., B. Anderson, R. Gordon, and P. Langley. 2018. Digital interface design and power: Friction, threshold, transition. *Environment and Planning D: Society and Space* 0 (0):0263775818767426.

Barainard, N. 2020. The digitalization of payments and currency: Some Issues for Consideration. Speech at the Symposium on the Future of Payments, Stanford, California. 5th February. https://www.federalreserve.gov/newsevents/speech/brainard20200205a.htm

Bernards, N. 2019a. The poverty of fintech? Psychometrics, credit infrastructures, and the limits of financialization. *Review of International Political Economy* 26 (5):815-838.

———. 2019b. Tracing mutations of neoliberal development governance: 'Fintech', failure and the politics of marketization. *Environment and Planning A: Economy and Space* 51 (7):1442-1459.

Bernards, N., and M. Campbell-Verduyn. 2019. Understanding technological change in global finance through infrastructures. *Review of International Political Economy* 26 (5):773-789.

Blakstad, S., and R. Allen. 2018. *FinTech Revolution: Universal Inclusion in the New Financial Ecosystem*. Basingstoke: Palgrave Macmillan.

Bratton, B. H. 2015. *The stack : on software and sovereignty / Benjamin H. Bratton*. Cambridge, Mass. ; London: Cambridge, Mass. ; London : MIT Press.

Buckley, R., D. Arner, and J. Barberis. 2016. The Evolution of Fintech: A New Post-Crisis Paradigm? *Georgetown Journal of International Law* 47:1271-1319.

Campbell-Verduyn, M., M. Goguen, and T. Porter. 2017. Big Data and algorithmic governance: the case of financial practices. *New Political Economy* 22 (2):219-236.

Chandler, C. 2017. Tencent and Alibaba are engaed in a massice battle in China. *Fortune*, May 13: https://fortune.com/2017/05/13/tencent-alibaba-chin.

Choudary, S. P. 2015. *Platform Scale: How an Emerging Business Model Helps Startups Build Large Empires with Minimum Investment*. Boston, MA: Platform Thinking Labs.

Christophers, B., A. Leyshon, and G. Mann. 2017. Money and finance after the crisis: taking critical stock. In *Money and Finance After the Crisis: critical thinking for uncertain times*, eds. B. Christophers, A. Leyshon and G. Mann, 1-39: Wiley.

Clarke, C. 2019. Platform lending and the politics of financial infrastructures. *Review of International Political Economy* 26 (5):863-885.

Cusumano, M. A., A. Gawer, and D. B. Yoffie. 2019. *The Business of Platforms: Strategy in the Age of Digital Competition, Innovation and Power*. New York: HarperCollins.

Delaporte, T., P. Price, and V. Bastid. 2016. World FinTech Report, 2017: Capgemini, LinkedIn and Efma.

Economist, T. 2017. In fintech, China shows the way. *The Economist*:February 25th: https://www.economist.com/news/finance-and-economics/21717393-advanced-technology-backward-banks-and-soaring-wealth-make-china-leader.

Efra, C. a. 2019. World FinTech Report 2019: https://www.capgemini.com/es-es/wp-content/uploads/sites/16/2019/06/World-FinTech-Report-WFTR-2019_Web.pdf.

Erturk, I., and S. Solari. 2007. Banks as Continuous Reinvention. *New Political Economy* 12 (3):369-388.

EY. 2019. Global FinTech Adoption Index 2019. https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf.

Feng, H. Y., J. Froud, S. Johal, C. Haslam, and K. Williams. 2001. A new business model? The capital market and the new economy. *Economy and Society* 30 (4):467-503.

Fields, D. 2018. Automated landlord: Digital technologies and post-crisis financial accumulation. *Environment and Planning A: Economy and Space* 0 (0):0308518X19846514.

Flynt, O. 2016. *FinTech: Understanding Financial Technology and its Radical Disruption of Modern Finance*: CreateSpace.

French, S., and A. Leyshon. 2004. The new, new financial system? Towards a conceptualization of financial reintermediation. *Review of International Political Economy* 11 (2):263-288.

Gabor, D., and S. Brooks. 2017. The digital revolution in financial inclusion: international development in the fintech era. *New Political Economy* 22 (4):423-436.

Galloway, S. 2017. *The Four : the hidden DNA of Amazon, Apple, Facebook and Google*. London: Bantam.

Gawer, A. 2014. Bridging differing perspectives on technological platforms: Toward an integrative framework. *Research Policy* 43 (7):1239-1249.

Geiger, S. 2019. Silicon Valley, disruption, and the end of uncertainty. *Journal of Cultural Economy*:1-16.

Golumbia, D. 2016. *The Politics of Bitcoin: Software as Right-Wing Extremism* Minneapolis: University of Minnesota Press.

Gray, M., and B. Zhang. 2017. Crowdfunding: understanding diversity. In *Handbook on the Geographies of Money and Finance*, eds. R. Martin and J. Pollard, 580-609. Cheltenham: Edward Elgar.

Gruin, J. 2019. Financializing authoritarian capitalism: Chinese fintech and the institutional foundations of algorithmic governance. *Finance and Society* Early View.

Gruin, J., and P. Knaack. 2019. Not Just Another Shadow Bank: Chinese Authoritarian Capitalism and the 'Developmental' Promise of Digital Financial Innovation. *New Political Economy*:1-18.

Gupta, P., and T. M. Tham. 2018. *FinTech: The DNA of Financial Services*. Berlin: Walter de Gruyter, Inc.

Guyer, J. I. 2016. *Legacies, logics, logistics: Essays in the anthropology of platform economy*. Chicago: The University of Chicago Press.

Haberly, D., D. MacDonald-Korth, M. Urban, and D. Wójcik. 2019. Asset Management as a Digital Platform Industry: A Global Financial Network Perspective. *Geoforum* 106:167-181.

Hancock, M., E. Burbidge, J. Glen, and A. Boden. 2018. Spotlight – FinTech: The Emerging Economy. . *New Statesman, April 5th. https://www.newstatesman.com/sites/default/files/ns_spotlight_fintech_supplement_april_2018.pdf*, April 5th.

Hardin, T. *China now rivals U.S. in VC investments, Venture Beat, October 14th: https://venturebeat.com/2017/10/14/china-now-rivals-u-s-in-vc-investments/* 2017 [cited.

Helmond, A. 2015. The Platformization of the Web: Making Web Data Platform Ready. *Social Media + Society* 1 (2):2056305115603080.

Hendrikse, R., D. Bassens, and M. Van Meeteren. 2018. The Appleization of finance: charting incumbent finance's embrace of FinTech. *Finance and Society* Early view:1-22.

HM Treasury. 2018. Fintech Sector Strategy: Securing the Future of UK Fintech. London: HM Treasury.

IMF. 2019. Global Financial Stability Report: Lower for Longer, October. https://www.imf.org/en/Publications/GFSR/Issues/2019/10/01/global-financial-stability-report-october-2019.

Jain, S., and D. Gabor. 2020. The Rise of Digital Financialisation: The Case of India. *New Political Economy*:1-16.

Joyce, H. 2019. A bank in your pocket. *The Economist*:https://www.economist.com/special-report/2019/05/02/young-people-and-their-phones-are-shaking-up-banking.

Kenney, M., and J. Zysman. 2018. Unicorns, Cheshire Cats, and the New Dilemmas of Entrepreneurial Finance? Available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3220780.

———. 2020. The platform economy: restructuring the space of capitalist accumulation. *Cambridge Journal of Regions, Economy and Society*.

Kremers, R., and J. Brassett. 2017. Mobile Payments, Social Money: Everyday Politics of the Consumer Subject. *New Political Economy* 22 (6):645-660.

Langevin, M. 2019. Big data for (not so) small loans: technological infrastructures and the massification of fringe finance. *Review of International Political Economy* 26 (5):790-814.

Langley, P. 2016. Crowdfunding in the United Kingdom: a cultural economy. *Economic Geography* 92 (3):301-321.

Langley, P., and A. Leyshon. 2017. Capitalizing on the crowd: The monetary and financial ecologies of crowdfunding. *Environment and Planning A: Economy and Space* 49 (5):1019-1039.

Mader, P. 2016. Card Crusaders, Cash Infidels and the Holy Grails of Digital Financial Inclusion. *Behemoth* 9 (2):59-81.

———. 2018. Contesting financial inclusion. *Development and Change* 49 (2):461-483.

Maurer, B. 2012. Mobile Money: Communication, Consumption and Change in the Payments Space. *The Journal of Development Studies* 48 (5):589-604.

———. 2015. Data-Mining for Development? Poverty, Payment, and Platform,. In *Territories of Poverty: Rethinking North and South*, eds. A. Roy and E. S. Crane. Athens: University of Georgia Press.

Maurer, B., and L. Swartz. 2015. Wild, Wild West: A View from Two Californian Schoolmarms. In *MoneyLab Reader: An Intervention in Digital Economy*, eds. G. Lovink, N. Tkacz and P. De Vries, 221-229. Amsterdam: Institute of Network Cultures.

McKinsey. 2016. A Brave New World for Global Banking: McKinsey Global Banking Annual Review 2016. ttps://www.mckinsey.com/~/media/McKinsey/Industries/Financial Services/Our Insights/A brave new world for global banking/McKinsey-Global-Banking-Annual-Review-2016.ashx.

McWaters, R. J., and R. Galaski. 2017. Beyond Fintech: A Pragmatic Assessment Of Disruptive Potential In Financial Services: World Economic Forum/Deloitte.

Moeller, M. 2018. Ready or not the new banks are here. In *LinkedIn: ttps://www.linkedin.com/pulse/ready-new-banks-here-martin-moeller/*.

National Economic Council. 2017. A Framework for FinTech. Waahington DC: The White House.

Ndung'u, N. 2018. Chapter 3 - The M-Pesa Technological Revolution for Financial Services in Kenya: A Platform for Financial Inclusion. In *Handbook of Blockchain, Digital Finance, and Inclusion, Volume 1*, eds. D. Lee Kuo Chuen and R. Deng, 37-56: Academic Press.

O'Dwyer, R. 2015. Money talks: The enclosure of mobile payments. In *MoneyLab Reader: an intervention in digital economy.*, eds. G. Lovink, N. Tkacz and P. De Vries, 230-44. Amsterdam: Institute of Network Cultures.

———. 2019. Cache society: transactional records, electronic money, and cultural resistance. *Journal of Cultural Economy* 12 (2):133-153.

Parker, G. G., M. W. Van Alstyne, and S. P. Choudary. 2016. *Platform Revolution: How Networked Markets are Transforming the Economy and How To Make Them Work For You*. New York: W. W. Norton.

Parkin, J. 2019. The senatorial governance of Bitcoin: making (de)centralized money. *Economy and Society*:1-25.

Pasquale, F. 2016. Two Narratives of Platform Capitalism. *Yale Law and Policy Review* 35 (1):309-19.

Pilling, D. 2019. China is cornering Africa's ecommerce market. *Financial Times*, October 9: https://www.ft.com/content/5a43931c-ea73-11e9-a240-3b065ef5fc55.

pwc. 2017. Redrawing the lines: FinTech's growing influence on financial services.

Realini, C., and K. Metha. 2015. *Financial Inclusion at the Bottom of the Pyramid*. Victoria BC: Friesen Press.

Rethel, L., and E. Thurbon. 2019. Introduction: Finance, Development and the State in East Asia. *New Political Economy*:1-5.

Rodima-Taylor, D., and W. W. Grimes. 2019. International remittance rails as infrastructures: embeddedness, innovation and financial access in developing economies. *Review of International Political Economy* 26 (5):839-862.

Rubini, A. 2017. *Fintech in a Flash: Financial Technology Made Easy*. Berlin: De Gruyter.

Sadowski, J. 2019. When data is capital: Datafication, accumulation, and extraction. *Big Data & Society* 6 (1):2053951718820549.

———. 2020. The Internet of Landlords: Digital Platforms and New Mechanisms of Rentier Capitalism. *Antipode* 52 (2):562-580.

Sarch, P., R. Kiem, and A. Ballard. *Financial Institutions M&A: Growing opportunities for sponsors. 27 November. White & Case: https://www.whitecase.com/publications/insight/financial-institutions-ma-growing-opportunities-sponsors* 2018 [cited.

Sender, H. 2018. How Alibaba and Tencent became Asia's biggest dealmakers. *Financial Times*, March 26: https://www.ft.com/content/38a54804-2238-11e8-9a70-08f715791301.

Siegfried, P. 2019. FinTechs continue to drive personal loan growth, ed. TransUnion. Chicago.

Smith, R. *42% of global e-commerce is happening in China. Here's why. World Economic Forum. 10 April: https://www.weforum.org/agenda/2018/04/42-of-global-e-commerce-is-happening-in-china-heres-why/* 2018 [cited.

Srnicek, N. 2016. *Platform Capitalism*. Cambridge: Polity.

Stalder, D., and A. Miller. 2018. 2019 looks to continue another lights out year for statups. *Tech Crunch, 31 December: https://techcrunch.com/2018/12/31/2019-looks-to-continue-another-lights-out-year-for-fintech-startups/*.

Tapscott, D., and A. Tapscott. 2016. *Blockchain Revolution: how the technology behind bitcoin is changing money, business and the world*. London: Portfolio Penguin.

Tiessen, M. 2015. The Appetites of App-Based Finance. *Cultural Studies*:1-18.

van Dijck, J. 2013. *The culture of connectivity : a critical history of social media*. Oxford: Oxford University Press.
van Dijck, J., T. Poell, and M. De Waal. 2019. *The Platform Society*. New York: Oxford University Press.
Wang, J., and M. A. Doan. 2018. The Ant Empire: Fintech Media and Corporate Convergence within and beyond Alibaba. *The Political Economy of Communication* 6 (2):25-37.
Waters, R., H. Kuchler, and T. Bradshaw. 2018. Big tech's stellar quarter proves the power of their platforms, The Financial Times, April 27, 2018. *The Financial Times*, April 27: https://www.ft.com/content/28ad66f2-49d4-11e8-8ee8-cae73aab7ccb.
Wood, D., and T. Monahan. 2019. Editorial: Platform Surveillance,. *Surveillance & Society* 17 (1/2):1-6.
World Bank. 2017. The Global Findex Database 2017. World Bank Group. Available at: https://globalfindex.worldbank.org/index.php/#GF-ReportChapters.
World Bank and the International Monetary Fund. 2018. The Bali Fintech Agenda: Chapeau paper. Washington: World Bank Group and International Monetary Fund.
Yang, B. 2019. The New Geographies of Venture Capital Investments in China. In *The 1st FinGeo Global Conference*. Beijing Normal University, beijing, China.
Zuboff, S. 2019. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. London: Profile Books.