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# DIGITAL TRANSFORMATION AND FINANCIAL INCLUSION

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## **1. INTRODUCTION**

Financial technology – commonly referred to as ‘fintech’ - links together the delivery of financial services with digital technology. Whilst the financial services industry has always relied on technological advances to spur innovation in the provision of services and the allocation of capital, recent data-based fintech developments, such as block chain, mobile payment systems, peer-to-peer lending platforms, crowdfunding and other internet-based financial services, are radically transforming the financial services industry by challenging the traditional business models of incumbent financial institutions and the institutional and operational infrastructure of the financial system. Indeed, fintech has given rise to new forms of currencies and new ways of allocating capital, managing risks and carrying out financial transactions. This digital transformation of the financial sector provides consumers with better targeted-services and lower prices, facilitates access to credit for small and medium-sized enterprises (SMEs), enhances productivity of traditional financial institutions and, more fundamentally, offers new possibilities of including more individuals and enterprises into the financial system.<sup>1</sup>

From this perspective, fintech offers great promise in its potential to democratise financial services by expanding access to previously unbanked or underserved groups and individuals. The process of integrating economic agents into the financial system by providing them with useful and affordable financial products and services delivered in a responsible and sustainable way is known as financial inclusion.<sup>2</sup> Even though access to financial services has drastically improved in the last decade across both developed and developing countries, most recent data suggests that about one third of the world’s adult population (around 1.7 billion individuals) still do not have a transaction account at a formal financial institution or through a mobile money provider, and is therefore excluded from the formal financial system.<sup>3</sup> In many emerging or developing economies, the share of unbanked adults has reached nearly 90%.<sup>4</sup> Yet, two-thirds of these unbanked individuals (approximately 1.1. billion) have a mobile

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<sup>1</sup> See Mark Carney, ‘The Promise of FinTech – Something New Under the Sun?’ (G 20 conference on ‘Digitising finance, financial inclusion and financial literacy’, Wiesbaden, 25 January 2017) <[www.bankofengland.co.uk/speech/2017/the-promise-of-fintech-something-new-under-the-sun](http://www.bankofengland.co.uk/speech/2017/the-promise-of-fintech-something-new-under-the-sun)> accessed 26 May 2020.

<sup>2</sup> World Bank Group, ‘Financial Inclusion’ <[www.worldbank.org/en/topic/financialinclusion](http://www.worldbank.org/en/topic/financialinclusion)> accessed 26 May 2020.

<sup>3</sup> Asli Demirgüç-Kunt and others, *Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution* (World Bank Group 2018) 35.

<sup>4</sup> Aaron Mehrotra and James Yetman, ‘Financial Inclusion – Issues for Central Banks’ (BIS Quarterly Review 2015) 83.

phone, which technically enables them to gain access to financial products and services.<sup>5</sup> Although financial inclusion closely relates to expanding the reach into financial services, the two concepts are not synonymous. Some individuals may have access to financial services without utilising such services, whether due to prohibitively high prices, regulatory barriers or a combination of market, institutional and cultural phenomena.<sup>6</sup> Access to financial services varies widely between developing and developed economies, knowing that in the latter almost all economic agents are included in the formal financial system; but in most developing countries only a small percentage has such access. Most of these unbanked or underserved individuals are in specific societal groups:<sup>7</sup> for instance, women are more likely to be financially excluded, so are people with poorer education and those living in rural areas, due to the lack of infrastructure and poor economic conditions.

The purpose of the present contribution is to explore the potential of the digital transformation through the lens of social sustainability, an aspect of sustainable finance that often remains in the shadow of the political and academic debate on environmental sustainability. This chapter analyses some of the main regulatory concerns and market barriers that arise from the digital transformation of the financial services industry. Focus is on how some developing and emerging market countries are confronting the challenges to achieving financial inclusion and, ultimately, at putting forward policy recommendations to make sure that new technologies create equal opportunities for all, while minimizing the unintended risks and consequences.

Assuming that innovation in financial products and technology should go hand in hand with adequate regulation that benefits society, we discuss how policymakers and financial regulators should respond to the fast-changing development in financial technologies. Part 1 begins by analysing how financial inclusion has become an important public policy objective and by exploring the potential of financial inclusion to contribute to financial and social sustainability. Part 2 then analyses to what extent fintech is a driver for financial inclusion and highlights some of the main advantages and risks of the digital transformation. We will analyse the different regulatory approaches of the People's Republic of China (China) and India to digital financial transformation, which, as we argue, illustrate some of the advantages and disadvantages for countries in addressing these challenges. Finally, part 3 discusses how policymakers and international standard setters have been coordinating on a cross-border level to develop principles and standards for regulating the provision of data-based financial services so that it can more effectively enable sustainable and socially inclusive economic growth. Part 4 then concludes.

## **2. FINANCIAL INCLUSION AS A PUBLIC POLICY CONCERN**

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<sup>5</sup> *ibid.*

<sup>6</sup> World Bank, 'Global Financial Development Report 2014: Financial Inclusion' (World Bank 2013) 2.

<sup>7</sup> Eugenia Macchiavello, *Microfinance and Financial Inclusion: The Challenge of Regulating Alternative Forms of Finance* (Routledge 2018) 9.

Financial inclusion is a public policy concern that directly relates to the objectives and activities of central banks and international financial standard-setting bodies.<sup>8</sup> Advocates of financial inclusion, including the World Bank and some financial institutions, unequivocally stress that the process of integrating more individuals and businesses into the financial system contributes to income equality, alleviates poverty, influences saving rates, investment decisions and improves overall economic welfare. From an economic perspective, financial inclusion is considered one of the major enablers of economic development.<sup>9</sup> The access to useful and safe financial products may allow previously unbanked individuals to invest in assets, including their own education and training, potentially reducing income inequality.<sup>10</sup> Conversely, financial exclusion increases the risk of poverty and, thus, is a key barrier to development.<sup>11</sup> Moreover, by making saving and investment decisions more efficient and facilitating the functioning of the economy, financial inclusion also reinforces monetary and financial stability.<sup>12</sup>

The indirect macroeconomic argument behind financial inclusion is that expanding access to finance benefits society as a whole because it leads to economic growth and, thus, to a more stable monetary and financial system.<sup>13</sup> According to Mehrotra and Yetman, enhanced inclusion should lead to a more efficient allocation of capital, and support central bank efforts to maintain price stability.<sup>14</sup> Further, increased access to credit and investment services boosts firm performance and enhances economic well-being. In that sense, the members of the Alliance for Financial Inclusion (AFI)<sup>15</sup> stated in the Maya Declaration on Financial Inclusion (Maya Declaration) that financial inclusion has a critical role in improving “national and global financial stability and integrity” and in contributing to “strong and inclusive growth in developing and emerging market countries”.<sup>16</sup> In addition, financial inclusion and sustainability were brought to the fore of international financial policymakers efforts in the wake of the 2007/2008 financial crisis when the G20 Heads of State at the Pittsburgh Summit stated that a core aim

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<sup>8</sup> Mehrotra and Yetman (n 4) 4.

<sup>9</sup> Asli Demirgüç-Kunt and Leonora Klapper, ‘Measuring Financial Inclusion: The Global Findex Database’ (2012) World Bank Policy Research Paper 6025; Minjin Kim and others, ‘Mobile Financial Services, Financial Inclusion, and Development: A Systematic Review of Academic Literature’ (2018) 84(5) *Electronic Journal of Information Systems in Developing Countries* 1 <<https://onlinelibrary.wiley.com/doi/10.1002/isd2.12044>> accessed 26 May 2020; Oksana Kabakova and Evgeny Plaksenkov ‘Analysis of Factors Affecting Financial Inclusion: Ecosystem View’ (2018) 89 *Journal of Business Research* 198.

<sup>10</sup> Mehrotra and Yetman (n 4) 83.

<sup>11</sup> Kim and others (n 9) 2.

<sup>12</sup> Irving Fisher, ‘Measures of Financial Inclusion – A Central Bank Perspective’ (Committee on Central Bank Statistics, Bank for International Settlements 2016) 4.

<sup>13</sup> Philip Mader, ‘Contesting Financial Inclusion’ (2018) 49 (2) *Development and Change* 461, 469.

<sup>14</sup> Mehrotra and Yetman (n 4) 83.

<sup>15</sup> The AFI is a network of financial inclusion policy members. Its members are central banks and other financial regulatory institutions from more than 80 emerging and developing economies. The mission of the AFI is to empower policymakers to increase access and usage of quality financial services for the underserved, through formulation, implementation and global advocacy of sustainable and inclusive policies.

<sup>16</sup> Alliance for Financial Inclusion, ‘2018 Maya Declaration Progress Report’ (2018) 3 <[https://www.afi-global.org/sites/default/files/publications/2018-09/AFI\\_Maya\\_report\\_2018\\_AW\\_digital.pdf](https://www.afi-global.org/sites/default/files/publications/2018-09/AFI_Maya_report_2018_AW_digital.pdf)> accessed 26 May 2020.

of international financial reforms was to “generate strong, sustainable and balanced global growth.”<sup>17</sup> Prior to the 2007/2008 financial crisis, most financial market regulators and standard-setting bodies refrained from taking into account regulatory objectives that did not appear to be directly related to the stability of the financial system and investor protection, as there was little appreciation for the role of regulation in mitigating social risks and contributing to financial equity and more inclusive growth through wider access to financial services.<sup>18</sup> Post-crisis regulatory reforms, however, are premised on the inter-linkages between financial institutions and the broader financial system and economy and the use of macro prudential tools to control and limit the systemic risks.<sup>19</sup>

Several think tanks, standard-setting bodies and policy makers have begun to actively address the challenges related to financial inclusion.<sup>20</sup> In 2006, the UN declared that “access to a well-functioning financial system can economically and socially empower individuals, in particular poor people, allowing them to better integrate into the economy of their countries, actively contribute to their development and protect themselves against economic shocks”.<sup>21</sup> The Global Partnership for Financial Inclusion (GPFI), through its three key partners AFI, the Consultative Group to Assist the Poor (CGAP) and the International Finance Corporation (IFC), have led international efforts to promote financial inclusion. Launched in 2010 at the G20 Summit in Seoul, the GPFI endorsed a Financial Inclusion Action Plan and spurred initial policy actions by publishing the G20 Principles for Innovative Financial Inclusion as a platform for knowledge sharing, policy advocacy and coordination.<sup>22</sup> In 2011, the AFI promulgated the Maya Declaration, an initiative to reach the world’s unbanked individuals (2.5 billion at that time) and to encourage national financial inclusion commitments by central banks in partnership with private sector actors. Also, the Better than Cash Alliance, a UN-based partnership of governments (mainly from developing economies), foundations, companies and international organizations, was created in 2012 with the aim to accelerate the transition from cash to digital payments in order to reduce poverty and promote inclusive growth.<sup>23</sup>

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<sup>17</sup> G20 Research Group, ‘G20 Leaders Statement: The Pittsburgh Summit’ (2009) Preamble no 13 <[www.g20.utoronto.ca/2009/2009communique0925.html](http://www.g20.utoronto.ca/2009/2009communique0925.html)> accessed 26 May 2020.

<sup>18</sup> Macchiavello (n 7) 14.

<sup>19</sup> Kern Alexander, *Principles of Banking Regulation* (CUP 2019) 396; Gudula Deipenbrock, ‘Is the Law Ready to Face the Progressing Digital Revolution? – General Policy Issues and Selected Aspects in the Realm of Financial Markets from the International, European Union and German Perspective’ (2019) 118 *Zeitschrift für vergleichende Rechtswissenschaft* 285, 303; Emily Jones and Peter Knaack, ‘Global Financial Regulations: Shortcomings and Reform Options’ (2019) 10 *Global Policy* 193.

<sup>20</sup> Kabakova and Plaskenkov (n 9) 198; M. Mostak Ahamed and Sushanta Mallick, ‘Is Financial Inclusion Good for Bank Stability? International Evidence’ (2019) 157 *Journal of Economic Behavior & Organization* 403.

<sup>21</sup> United Nations, ‘Building Inclusive Financial Sectors for Development’ (Joint Report by the United Nations Department of Economic and Social Affairs and the United Nations Capital Development Fund 2006) 4.

<sup>22</sup> About the work and the mission of the GPFI, see: James Pearse, ‘About GPFI’ (25 November 2013) <<http://gpfi.org/about-gpfi>> accessed 26 May 2020.

<sup>23</sup> About the work, members and mission of the Better than Cash Alliance, see: Better than Cash Alliance, ‘About the Better than Cash Alliance’ <[www.betterthancash.org/](http://www.betterthancash.org/)> accessed 11 May 2020.

Financial inclusion has also made its entry into the United Nation's 2030 sustainable development agenda (2030 SDG Agenda).<sup>24</sup> While not a sustainable development goal (SDG) in itself, financial inclusion is considered an enabler of other SDGs, where it is featured as a target in 8 of the 17 goals. Accordingly, financial inclusion is supposed to help eradicate poverty and hunger, to achieve food security and to promote sustainable agriculture (SDG 1 & 2). Further, financial inclusion also supports health and well-being (SDG 3), promotes gender equality by economically empowering women (SDG 5), boost economic growth and development (SDG 8), supports industry, innovation and infrastructure (SDG 9) and reduces inequality (SDG 10). In addition, SDG 17's strengthening the means of implementation implies a role for greater financial inclusion through greater savings mobilization for investment and consumption that can stimulate growth.<sup>25</sup>

The emphasis on financial inclusion in the 2030 SDG agenda is premised on the important role that the financial system plays in the shift towards a circular and more sustainable economy. In this vein, financial inclusion has also caught the attention of international financial institutions and central banks. In 2016, the primary global standard setter for the prudential regulation of banks, the Basel Committee on Banking Supervision, published its "Guidance on the application of the core principles for effective banking supervision to the regulation and supervision of institutions relevant to financial inclusion".<sup>26</sup> In the same year, the G20 supported its initial 2010 Principles for Innovative Financial Inclusion by endorsing the G20 High-Level Principles for Digital Financial Inclusion, where the focus is placed on providing a basis for national action plans to leverage the potential offered by digital technologies.<sup>27</sup> The World Bank Group implemented in 2017 the Financial Inclusion Global Initiative (FIGI) to support and accelerate the implementation of country-led reform actions to meet national financial inclusion targets.<sup>28</sup>

These international initiatives are premised on the key assumption that the expansion of financial markets and the availability of financial services is vital for a country – particularly developing and emerging market countries – in promoting economic development and poverty reduction. It comes as no surprise therefore that the fintech and information technology (IT) sectors, backed by institutions

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<sup>24</sup> United Nations, 'Transforming Our World: The 2030 Agenda for Sustainable Development' (2015) <<https://sustainabledevelopment.un.org/post2015/transformingourworld>> accessed 26 May 2020.

<sup>25</sup> The relationship between expanding access to financial services and achieving the SDGs has been discussed extensively in a 2016 working paper published by the Consultative Group to Assist the Poor (CGAP): CGAP, 'Achieving Sustainable Development Goals: The Role of Financial Inclusion' (2016) 2 <[www.cgap.org/sites/default/files/researches/documents/Working-Paper-Achieving-Sustainable-Development-Goals-Apr-2016\\_0.pdf](http://www.cgap.org/sites/default/files/researches/documents/Working-Paper-Achieving-Sustainable-Development-Goals-Apr-2016_0.pdf)> accessed 26 May 2020.

<sup>26</sup> Basel Committee on Banking Supervision, 'Guidance on the Application of the Core Principles for Effective Banking Supervision to the Regulation and Supervision of Institutions Relevant to Financial Inclusion' (Bank for International Settlements September 2016) <[www.bis.org/bcbs/publ/d383.htm](http://www.bis.org/bcbs/publ/d383.htm)> accessed 26 May 2020.

<sup>27</sup> G20, 'G20 High-Level Principles for Digital Financial Inclusion' (2016) <[www.gpfi.org/sites/gpfi/files/documents/G20%20High%20Level%20Principles%20for%20Digital%20Financial%20Inclusion%20-%20Full%20version-.pdf](http://www.gpfi.org/sites/gpfi/files/documents/G20%20High%20Level%20Principles%20for%20Digital%20Financial%20Inclusion%20-%20Full%20version-.pdf)> accessed 26 May 2020.

<sup>28</sup> World Bank Group, 'Financial Inclusion Global Initiative (FIGI)' (18 July 2019) <[www.worldbank.org/en/topic/financialinclusion/brief/figi](http://www.worldbank.org/en/topic/financialinclusion/brief/figi)> accessed 26 May 2020.

such as the World Bank, the World Economic Forum (WEF) and the Bill and Melinda Gates Foundation, are enthusiastic about financial inclusion. The growing role of Big Tech firms – such as Google, Amazon and Facebook – along with the existing influence of incumbent financial institutions in providing financial services are leading a transformation of the traditional banking and financial system to a data-driven banking and finance business model that is resulting in a “Big Bang” in data-driven financial services.<sup>29</sup> This has highlighted one of the greatest challenges for the global financial services industry that involves how to reconcile the objectives and the tools of data regulation and financial regulation. The proponents of this ‘Big Bang’ in data-driven financial services and its broad scope of application argue that it will enhance financial inclusion by widening access to financial services resulting in improved living standards and poverty alleviation because of reduced transaction costs in the provision of capital and credit to a larger number of individuals and firms.<sup>30</sup>

Nonetheless, policymakers and regulators should refrain from an overly optimistic view about financial inclusion through digitalization as a strategy for poverty alleviation and development. The hypothesis that financial inclusion leads to improved standards of living is not without controversy and risks.<sup>31</sup> Skeptics point out that financial inclusion is a mere re-branding for microfinance, which appeared in the 1970s and, following initial praise,<sup>32</sup> developed into a “global finance-development hybrid specialized in making high interest loans”.<sup>33</sup> Microfinance institutions have come under scrutiny for a variety of reasons, notably their high-interest rates and their fixation on credit, which leads to over-indebtedness.<sup>34</sup> Although microfinance and financial inclusion are related concepts,<sup>35</sup> the analogy is not entirely accurate. With community-based programmes, cooperative institutions, technology firms, mobile network operators and credit card companies on board, financial inclusion involves a new set of players and practices that have little in common with microfinance.<sup>36</sup> In addition, with the impetus of sustainable development, financial inclusion blends financial logics with the idea of social justice and equality.<sup>37</sup>

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<sup>29</sup> The US Federal Trade Commission (FTC) has addressed some of the important questions about how to regulate finance, data and technology in ways that do not inhibit the development of the digital economy. The FTC adopted in 2019 broad new requirements for financial institutions to protect the privacy and security of customers’ data. See: FTC, ‘FTC Seeks Comment on Proposed Amendments to Safeguards and Privacy Rules’ (2019) <[www.ftc.gov/news-events/press-releases/2019/03/ftc-seeks-comment-proposed-amendments-safeguards-privacy-rules](http://www.ftc.gov/news-events/press-releases/2019/03/ftc-seeks-comment-proposed-amendments-safeguards-privacy-rules)> accessed 26 May 2020.

<sup>30</sup> Tavneet Suri and William Jack, ‘The Long-run Poverty and Gender Impacts of Mobile Money’ (2016) 354 *Science* 1288, 1288ff.

<sup>31</sup> For a critical view on financial inclusion, see Mader (n 13), 461ff; Milford Bateman, Maren Duvendack and Nicholas Loubere, ‘Is Fin-tech the New Panacea for Poverty Alleviation and Local Development? Contesting Suri and Jack’s M-Pesa Findings Published in *Science*’ (2019) 161 *Review of African Political Economy* 480.

<sup>32</sup> The UN and the World Bank regarded microfinance as a ‘miraculous tool to spur development’ (Macchiavello (n 7) 82). See also United Nations, ‘Monterrey Consensus on Financing for Development’ (2003) 8 point 18, <[www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A\\_CONF.198\\_11.pdf](http://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.198_11.pdf)> accessed 26 May 2020; Ousa Sananikone, ‘Microfinance and the Millennium Development Goals’ (CGAP donor brief no 9 2002) <<http://documents.worldbank.org/curated/en/960981468140964497/Microfinance-and-the-millennium-development-goals>> accessed 26 May 2020.

<sup>33</sup> Mader (n 13) 463.

<sup>34</sup> Mader (n 13) 463.

<sup>35</sup> On the interrelationship between financial inclusion and microfinance, see Macchiavello (n 7), 18 f and 82ff.

<sup>36</sup> Mader (n 13) 464.

<sup>37</sup> *ibid.*

The fervour of financial inclusion steers the focus away from the fundamental question about the responsibility of financial markets in creating inequality. Indeed, incorporating underprivileged and often poorly educated people into the financial system through advances in technology may exacerbate existing inequalities and lead to an increase in indebtedness.

In view of the quest for social justice, regulators and policymakers should make sure that data-driven financial services and related fintech innovations do not lead to a development hybrid that puts even greater power in the hands of financial market actors. A sustainable financial system calls for a transformative system change and not for incremental measures that merely mitigate the symptoms of poverty by extending services to the poor as a goal itself. Therefore, new policies and regulations should focus on the needs and the protection of those excluded from the financial system by adopting policies that maximise the opportunities and minimise the risks for society.

### **3. ADVANTAGES AND RISKS OF THE TECHNOLOGICAL TRANSFORMATION**

If financial inclusion means delivering financial services and products to unbanked and underserved groups in a sustainable way, it is critical to monitor the providers of innovative financial products and services. Through technologically enabled mobile and online platforms, innovative fintech providers make financial operations both less expensive and more convenient to their customers. An important feature fintech innovations have in common is their potential to increase proximity with customers, given their ability to bypass financial intermediaries by connecting services directly with consumers. The boundaries between financial providers and consumers become increasingly blurred, which challenges traditional legal categories and, therefore, the validity of current legal regulatory approaches.<sup>38</sup>

For example, crowdfunding companies have disrupted the business of raising capital and challenged the traditional monopoly large banks have had in deciding which companies and individuals receive loans and investment. Another example are software and mobile phone applications that match borrowers with lenders without a traditional intermediary. These so-called peer-to-peer lending platforms have been highly successful in China where they expanded exponentially in just a decade, from a single platform in 2007 to almost 2000 in 2017.<sup>39</sup> The benefits are an easier access to capital for SMEs and consumers. With capital from multiple sources being pooled, default risk is spread out and decentralized. Consequently, large banks find themselves under competitive pressure, which supposedly improves overall economic efficiency.

The shortcut of the intermediary chain facilitates substantially the access to financial products and services by drastically reducing information asymmetry and transaction costs. In that perspective, one

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<sup>38</sup> Macchiavello (n 7), 213. See also Deipenbrock (n 19) 303.

<sup>39</sup> James Guild, 'Fintech and the Future of Finance' (2017) 10 Asian Journal of Public Affairs 52, 59.

of the promises of the digital transformation is not only the creation of highly efficient economically and socially integrated ecosystems, but also its potential to provide access to financial products and services to economic agents who lack access to a formal transaction account and hence were excluded from the financial system.

Considering the above, the link between expanding access to financial products and services and development seems unquestioned.<sup>40</sup> However, while fintech innovations create a wide variety of possibilities to include more people and businesses into the financial system, it does not necessarily lead to a more sustainable financial system. Indeed, the prospects of fintech to increase financial inclusion are extensive, it also creates multiple micro- and macro financial risks, as well as social risks, to which low-income populations are exposed to a larger extent.

First, fintech innovations raise concerns about consumer protection and over-indebtedness. While the digital transformation of the financial sector spurs financial inclusion of low-income households and businesses by boosting their incomes and savings, it also leads to a higher debt of individuals and SMEs. One example of this phenomenon is the mobile payment provider M-Pesa in Kenya. Founded in 2007 and ever since internationally celebrated for its transformative power to lift “thousands of households out of poverty”,<sup>41</sup> M-Pesa substantially facilitated digital cash transfers by providing mobile banking access through standard text messages. Monetary value can be stored on a mobile phone and then be sent to other users, without the need of a smart phone. In a country where many people had cell phones but no debit cards and, especially in rural areas, where poor infrastructure made going to the bank burdensome, M-Pesa appeared as a leading example of a fintech company responding to an unmet market need. M-Pesa is often cited as a successful example of financial inclusion in a developing country, having lifted nearly 10% of Kenya’s poorest households out of poverty.<sup>42</sup> Yet, M-Pesa and other microcredit and fintech institutions have also made it easier for individuals and small businesses to increase debts, an aspect which often is ignored in the debate. According to Bateman et al. (2019), Kenya is facing “high and growing levels of over-indebtedness” as a result of the operations of M-Pesa and similar fintech institutions.<sup>43</sup>

Another risk for customers is the misuse of their digital data. Most individuals underestimate the privacy risks that cheap financial products entail. Indeed, fintech providers use algorithms to make decisions about their customers, which may reinforce existing disparities and financial exclusion.<sup>44</sup> Whereas traditional financial institutions are bound by a detailed regulatory framework to protect the use of their customer’s data, fintech companies often do not fit into existing legal categories which allows them to

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<sup>40</sup> CGAP (n 26) 9.

<sup>41</sup> Suri and Jack (n 30) 1288ff.

<sup>42</sup> UNSGSA, ‘UNSGSA 2017 Annual Report’ (2017) 8 <[www.gpfi.org/publications/unsgsa-2017-annual-report](http://www.gpfi.org/publications/unsgsa-2017-annual-report)> accessed 26 May 2020.

<sup>43</sup> Bateman, Duvendack and Loubere (n 31) 486.

<sup>44</sup> UNSGSA (n 42) 9.

avoid compliance with burdensome regulation. In considering the linkages between regulating both finance and data, the European Union (EU)'s implementation of the General Protection of Data Regulation (EU GDPR) has resulted in a fundamental change in how firms are required to manage personal data and applies to all EU markets and citizens and extraterritorially to all non-EU persons and firms dealing with EU markets and firms.<sup>45</sup> The EU places great emphasis on a privacy-oriented approach to data protection and privacy that provides uniquely stronger safeguards for customer data protection and portability than almost any other large economic jurisdiction.

In contrast, China and the United States of America (US) have taken a different approach to data regulation and privacy that has allowed the emergence of a small group of Big Tech and financial technology companies who dominate market share while being subject to much less stringent regulations in respect to data protection and privacy in the financial sector.<sup>46</sup> China's regulation of data-driven finance emerged from a largely laissez-faire approach prior to 2014 in which a small number of major tech firms, with state acquiescence, became dominant market players with little supervisory oversight. This changed in 2015 and 2016 when the People's Bank of China, responding to the growth of new fintech corporates, such as Ant Financial and Tencent, took steps to limit their market growth by imposing risk-based regulations for solvency, liquidity and related governance controls.<sup>47</sup> Despite these regulations, financial intermediaries in China (as financial institutions did in the US) were allowed to collect large amounts of data from and about their customers.<sup>48</sup> Data-driven financial firms acquired dominant market share based on network effects and economies of scale and scope, resulting in an oligopolistic market structure in consumer payment platform services. These firms have also provided the Chinese government with sweeping use of individual and firm data for widespread surveillance.<sup>49</sup>

China's relatively unfettered market-based approach to data regulation should be contrasted with India's more centralised approach to finance and data – known as 'India Stack'<sup>50</sup> – adopted in 2016 that revolves around a centralised strategy for managing its digital financial transformation. Until recently, India trailed other large jurisdictions, such as the EU, China and the US, in its sophistication for the regulation of finance and data-driven finance. With the development and implementation of India Stack, however, India has put into practice a comprehensive approach to providing the infrastructure necessary to support the development of digital financial transformation and data-driven finance. The India Stack strategy

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<sup>45</sup> See Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regards to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L119/1, 1-88.

<sup>46</sup> See generally Dirk Zetsche and others, 'The Future of Data Driven Finance: Financial Regulation, Data Regulation, and RegTech' (*The CLS Blue Sky Blog*, 15 April 2019) <<https://clsbluesky.law.columbia.edu/2019/04/15/the-future-of-data-driven-finance-financial-regulation-data-regulation-and-regtech/>> accessed 26 May 2020.

<sup>47</sup> Weihuan Zhou, Douglas W Arner and Ross P Buckley, 'China's Regulation of Digital Financial Services: Some Recent developments', (2016) 90 issue 5 *Australian Law Journal* 297.

<sup>48</sup> *Ibid.*

<sup>49</sup> *Ibid.*

<sup>50</sup> See India Stack, 'What is India Stack?' <<https://www.indiastack.org/about/>> accessed 26 May 2020.

combines a system of digital identification that supports a digital payment system that facilitates interoperability across traditional and new payment technologies and providers. An important part of India Stack is the Aadhaar system that is operated by the Unique Identification Authority of India (UIDAI). The Aadhaar system provides a unique 12-digit randomised identification number to all residents on a voluntary basis. Since 2016, almost all of India's 1.3 billion people have been registered with numbers.<sup>51</sup> These numbers make it more administratively efficient for the government to provide access to government services, including social insurance and welfare payments, and banking, insurance and other services. The Aadhaar system has proven beneficial for the government and for individuals and small firms who were previously excluded from the formal financial system. Prior to Aadhaar, it is estimated that 45% of Indian government payments reached the wrong payee. Moreover, fraudulent payments related to government transfer payments have been reduced by US\$5 billion a year.

India Stack also provides a know-your-customer ('KYC') e-system, known as 'eKYC', to support the integrity of account opening and ongoing account transactions.<sup>52</sup> The eKYC system can also be used to verify and confirm a number of other government financial functions such as tax and salary payments, crediting and debiting vendor accounts and ensuring welfare payments to society's most vulnerable. The creation of this data infrastructure, including personal accounts with identification numbers for all individuals and firms who make tax payments or receive payments from the government, has caused a massive digitalisation and datafication of the Indian financial system that has enhanced financial inclusion, and generated a substantial digital financial transformation of society.

The Aadhaar system has made access to financial accounts much easier, thereby improving financial inclusion. It is used by almost every business (online or offline) to link bank accounts and tax identification numbers and to authenticate bank accounts for the eKYC process resulted in legal actions alleging breach of data privacy.<sup>53</sup> It has facilitated the digitization of payments and services for the government and the financial sector, reducing losses due to corruption and enabling the vast majority of the population to have a government financial account that can be used for opening bank and investment accounts.

Nevertheless, there have been implementation problems, particularly regarding data protection and privacy. Critics have described Aadhaar as mass surveillance technology and legal petitions challenged its constitutionality before the Indian Supreme Court.<sup>54</sup> The Indian Supreme Court ruled that the government's use of the data was lawful, but it also held that the use of the data by private firms was

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<sup>51</sup> Kathryn Henne, 'Surveillance in the name of governance: Aadhaar as a Fix for Leaking Systems in India' in Blayne Haggart, Kathryn Henne and Natasha Tusikov (eds), *Information, Technology and Control in a Changing World – Understanding Power Structures in the 21<sup>st</sup> Century* (Palgrave Macmillan 2019) 224.

<sup>52</sup> See the eKYC process at: India Stack, 'About eKYS API' <<https://www.indiastack.org/ekyc/>> accessed 26 June 2020.

<sup>53</sup> Kathryn Henne (n 51) 226-227.

<sup>54</sup> *ibid* 224. The case in question is: Justice K S Puttaswamy (Retd) and Anr vs Union of India and Ors, Writ Petition (Civil) no 494 of 2012 (2017 SCC OnLine SC 996).

not undertaken in conformity with privacy safeguards.<sup>55</sup> One result of this decision was that the government's use of the data was required to be proportional to the public policy objectives of financial inclusion and reducing financial crime and tax evasion. The judgment identified privacy of personal data to be a fundamental constitutional right and that any infringement of that right in order to achieve valid public policy objectives had to be proportional.<sup>56</sup>

In response to the Indian Supreme Court decision, the President of India approved in March 2019 an ordinance that allows voluntary use of Aadhaar as proof of identification for obtaining mobile SIM cards and opening bank accounts. Also, the Aadhaar Act and other related legislation were amended in 2019, and the Aadhaar (Pricing of Aadhaar Authentication Services) Regulations, 2019) resulting in private entities being able to use data collected through Aadhaar scheme for e-KYC after making a payment per transaction to the Aadhaar authority Unique Identification Authority of India.<sup>57</sup>

The Aadhaar system's problems in addressing data protection and fraud demonstrate the inherent weaknesses of such technologies, particularly in developing countries where data is much more limited and in certain cases easier to misrepresent and misuse. This is why fintech innovations, despite innovations, should be scrutinised closely for their compliance with data protection, anti-money laundering and cyber-security regulations.<sup>58</sup> Compliance with anti-financial crime regulations is also important from a financial inclusion perspective since economic agents who are not using formal deposit-taking banks are even more vulnerable to frauds and misuse of data. Recently, scandals erupted over frauds and abusive practices by fintech companies, involving the use of mobile phones to make payments. In 2015, a Chinese peer-to-peer lending company has revealed itself to be part of a fraudulent scheme that misappropriated over \$5.5 billion.<sup>59</sup>

From a systemic point of view, decentralized and rapidly evolving technologies may pose a risk to the stability of the financial system.<sup>60</sup> Certainly, the arrival of new depositors generates more diversity on the lending market which, at first glance, may contribute to financial stability. Yet, the expansion of financial access also leads to rapid and excessive credit growth with inadequate lending standards and, potentially, to instability in lending markets.<sup>61</sup> The fact that fintech companies are usually small, dispersed and difficult to monitor raises other systemic risks than the ones that led to the financial crisis of 2007/08. In fact, an under-appreciated systemic risk in the fintech sector has been that its fast paced

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<sup>55</sup> *ibid*, 226-28.

<sup>56</sup> *ibid*.

<sup>57</sup> For a detailed discussion of the amended legislation and the ordinance, see: Press Trust of India, 'President's Nod to Ordinance for Voluntary Use of Aadhaar as ID Proof for Bank a/c, SIM' *Times of India* (New Delhi 3 March 2019).

<sup>58</sup> Machiavello (n 7) 214.

<sup>59</sup> Emily Feng, 'Chinese Government Faces Peer-to-Peer Lending Scandals Dilemma' *Financial Times* (12 November 2018).

<sup>60</sup> William Magnuson, 'Regulating Fintech' (2018) 71 *Vanderbilt Law Review* 1167, 1199 ff.

<sup>61</sup> Mehrotra and Yetman (n 4) 84 and 92; Magnuson (n 60) 1200.

growth creates the risk that the fintech industry skips the intermediary stage of being “too large to ignore” by evolving directly from “too small to care” to “too big to fail”.<sup>62</sup>

#### **4. TURNING DIGITAL TRANSFORMATION INTO INCLUSIVE GROWTH**

The above-mentioned risks and unintended consequences of fintech innovations raise important policy questions about appropriate regulation and supervision. From a public policy perspective, the challenge is to ensure that fintech develops in a way that maximises the opportunities and minimises the risks for society.<sup>63</sup> This is all the more relevant, as fintech companies and individuals or small businesses are not operating in a level playing field.

What is the role of global financial governance in mitigating these risks? How can regulatory frameworks facilitate the process of expanding access to finance for low-income countries (or in general underserved groups)? Financial regulators, central banks and standard-setting bodies in global finance hold the reins to control many of the levers that can drive financial inclusion, without simultaneously endanger financial stability. These actors play also a relevant role in the process of financial inclusion, given their access to data, information, currencies and payment infrastructures.

Directing fintech innovation towards inclusive growth and increased social equity involves a coordination on an international level that brings together all relevant stakeholders such as fintech companies, standard-setting bodies and national financial regulators. As a first step, the United Nations suggest the development of good practices for regulating and monitoring fintech innovation.<sup>64</sup>

Financial markets are increasingly interconnected, yet financial systems remain primarily administered on a national level. In order to unleash the full potential for fintech to contribute to sustainable and inclusive growth, financial regulators and central banks need to take into account the international dimension of fintech and coordinate their actions on a global level. MAGNUSON identified three principles for an “internationally minded regulatory approach” to fintech regulation.<sup>65</sup> First, with consumers, investors and providers dispersed around the globe, fintech activity is implicitly detached from national borders. Since multiple regulators are having an interest in regulating the activities of fintech providers, fintech regulation needs to have a substantial extraterritorial dimension.<sup>66</sup> Second, the regulatory approach of one country necessarily affects other countries, for there are important

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<sup>62</sup> Douglas W. Arner, Janos Nathan Barberis and Ross P. Buckley, ‘The Evolution of Fintech: A Post-Crisis Paradigm?’ (2015) University of Hong Kong Faculty of Law Research Paper no 2015/047, UNSW Law Research Paper no 2016-62, 35 <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2676553](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2676553)> accessed 26 May 2020.

<sup>63</sup> Carney (n 1).

<sup>64</sup> See UNSGSA (n 42).

<sup>65</sup> Magnuson (n 60) 1222.

<sup>66</sup> Magnuson (n 60) 1222.

distributional effects of choosing one regulatory regime over another.<sup>67</sup> This means that jurisdictions are in competition with each other, which may lead to a “race to the bottom”, given that a specifically burdensome regulatory approach may cause fintech activity to shift from one country to another. Third, and despite this regulatory competition between jurisdictions, financial regulators are advised to establish ties with their peer institutions in other jurisdictions, in order to share useful information with respect to their experience with fintech regulation. By building networks for formal and informal exchanges of information, financial regulators could benefit from the lessons other financial authorities learned.<sup>68</sup>

When it comes to the bottom line in considering possible policy pathways to boost financial inclusion through technological innovation, proportionality is key. How can we shape regulation in a way not to unduly restrict inclusion? What is the optimal level of regulation for the market? On the one hand, regulatory safeguards are necessary with a view to mitigate the risks that arise with fintech innovation. On the other hand, given that, regulation raises prices for products and services, regulatory intervention should not infringe the fundamental rights, such as the freedom to conduct business, which includes the interest to dispose of one’s property and to keep sensitive information confidential.<sup>69</sup> At the same time, as Zilioli points out, the freedom to conduct a business should not unduly threaten regulatory objectives, such as consumer protection and the stability of the financial system.<sup>70</sup>

The Basel Committee on Banking Supervision acknowledged the principle of proportionality as one of the core principles for effective banking supervision.<sup>71</sup> Accordingly, the risks from fintech players for the financial systems call for a well-calibrated regulatory and supervision approach.<sup>72</sup>

Most policymakers and market participants would agree that regulatory intervention should be proportional, but proportionality is an elastic concept with a different meaning in different jurisdictions. International standards for fintech need to be readily adjusted for use in a variety of jurisdictions. Since developed and developing economies have a very different starting point, with the latter being characterized by higher inequality and weaker institutional structures, it becomes apparent that there is

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<sup>67</sup> *ibid* 1223.

<sup>68</sup> *ibid*.

<sup>69</sup> Chiara Zilioli, ‘Proportionality as the Organizing Principle of European Banking Regulation’ in Theodor Baum and others (eds) *Zentralbanken, Währungsunion und stabiles Finanzsystem – Festschrift für Helmut Siekmann* (Duncker und Humblot 2019) 257.

<sup>70</sup> *ibid*, quoting Article 1(1) of Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks in the European Central Bank concerning policies relating to the prudential supervision of credit institutions [2013] OJ L287/63.

<sup>71</sup> Basel Committee on Banking Supervision, ‘Core Principles for Effective Banking Supervision’ (Bank for International Settlements September 2012) principle 8 – Supervisory approach: ‘An effective system of banking supervision requires the supervisor to develop and maintain a forward-looking assessment of the risk profile of individual banks and banking groups, proportionate to their systemic importance; identify, assess and address risks emanating from banks and the banking system as a whole; have a framework in place for early intervention; and have plans in place, in partnership with other relevant authorities, to take action to resolve banks in an orderly manner if they become non-viable’.

<sup>72</sup> Mehrotra and Yetman (n 4) 88.

no one-size-fits-all solution for regulatory intervention. In this regard, it is important to ensure that developing countries are able to express their voice in global standard setting. In theory, according to the principle of equivalence of global governance, those who “are affected by a global public good or bad should have some say in its provision or regulation”.<sup>73</sup> Yet, given the unequal distribution of power in global financial markets, there is “a rigid divide between standard-setters and standard-takers”.<sup>74</sup> Greater autonomy on the national or regional level would be of limited help, because in practice, the unequal distribution of power in global financial markets, would give the jurisdictions of the financial hubs the leeway to dictate the standards of the market.<sup>75</sup> Emerging and developing economies, for which financial inclusion is a particular concern, would follow the rules and standards of the market. Therefore, the principle of proportionality is the glue that ties together the regulation with the inclusiveness objective.

A proportionate regulatory response is also a matter of the right timing, since regulatory requirements should not unnecessarily suppress financial innovation at an early stage. Yet, if new service providers become economically important, to the extent that they could pose potential financial stability risk, regulators should intervene.<sup>76</sup> An example to illustrate the importance of the right timing of regulatory intervention is the reaction of the Kenyan Central Bank following the emergence of M-Pesa. In 2009, that is two years after the emergence of M-Pesa, the Central Bank of Kenya acknowledged that digital payment systems should not be subject to the same requirements as banking services, which paved the way for a lighter intervention without burdensome capital and compliance requirements. According to Guild, this proceeding “clarified regulatory confusion allowed the service to confidently pursue an expansion strategy”.<sup>77</sup> In addition to the regulatory gap at this early stage, M-Pesa benefited from low start-up requirements, since the technology used the existing telecom network, meaning that there was no need to invest in or build out infrastructure. According to a study led by Suri/Jack,<sup>78</sup> M-PESA raised long-term consumption levels per capita and lifted nearly one in 10 of Kenya’s poorest households out of poverty, with an even higher impact for female-headed households.<sup>79</sup> In general, the emergence of mobile money in Kenya increased financial resilience and saving and allowed a more efficient allocation of labour. Ten years after the emergence of M-Pesa, mobile cash service has reached approximately 90 % of the Kenyan population.<sup>80</sup>

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<sup>73</sup> David Held and Kevin Young, ‘The World Crisis: Global Financial Governance: Principles of Reform’ (IDEAS reports – special reports, Nicholas Kitchen (ed.) LSE IDEAS 2009), 17 <[http://eprints.lse.ac.uk/43602/1/The%20world%20crisis\\_%20global%20financial%20governance\(lsero\).pdf](http://eprints.lse.ac.uk/43602/1/The%20world%20crisis_%20global%20financial%20governance(lsero).pdf)> accessed 1 June 2020.

<sup>74</sup> Jones and Knaack (n 19) 200.

<sup>75</sup> *ibid.*

<sup>76</sup> Mehrotra and Yetman (n 4) 88.

<sup>77</sup> Guild (n 40) 10.

<sup>78</sup> Suri and Jack (n 42) 1288.

<sup>79</sup> UNSGSA (n 42) 8.

<sup>80</sup> Guild (n 40) 10.

In order to give developing countries a voice in global financial standard-setting, it is of paramount importance to ensure that they are sufficiently represented in international standard-setting bodies. The Financial Stability Board (FSB), took a step in that direction in 2014, by allocating more seats to officials from emerging market member jurisdictions.<sup>81</sup> Some authors even suggest more radical measures, such as a merger of the FSB with the International Monetary and Financial Committee<sup>82</sup> or the creation of an international treaty under the umbrella of the International Monetary Fund (IMF) for the integration of micro and macro prudential supervisory institutions.<sup>83</sup>

Another, more specific reform proposal for global financial regulation is the creation of a new standard setting body for the prudential supervision of digital financial services. Instead of integrating the supervision of fintech providers into an existing organisation, Jones and Knaack suggest that such a new organisation should be placed under the auspices of the FSB and operate with a dual mandate to balance financial stability with the objective of inclusive growth.<sup>84</sup>

## 5. CONCLUSION

The chapter analysed some of the main issues related to how policymakers and standard setters are addressing the challenges of the digitalisation of finance (fintech) and financial inclusion. While fintech offers a myriad of different opportunities to include the unbanked around the world, it is also a Pandora's Box unleashing a number of risks that can undermine the stability and integrity of the financial system, in particular for developing economies. Developing country and emerging market regulators are confronted with the need to find a balance between allowing advances in technology to develop more options for consumers and businesses for data-based financial services and the regulation of such services to achieve regulatory objectives, such as financial stability, consumer protection and privacy rights. The principle of proportionality is key for policymakers in finding the right balance between the extent and scope of regulation to achieve these objectives whilst recognising that the adoption of such measures can lead to increased costs in the provision of finance and thus to further financial exclusion.<sup>85</sup>

India has adopted the most centralised and comprehensive strategy to enhance financial inclusion. Indeed, the India Stack strategy provides an alternative model for a developing and emerging market

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<sup>81</sup> Financial Stability Board (FSB), 'Report to the G20 Brisbane Summit on the FSB's Review of the Structure of its Representation' (FSB, 15-16 November 2014) 2 <[www.fsb.org/wp-content/uploads/Report-to-the-G20-Brisbane-Summit-on-the-FSB%E2%80%99s-Review-of-the-Structure-of-its-Representation.pdf](http://www.fsb.org/wp-content/uploads/Report-to-the-G20-Brisbane-Summit-on-the-FSB%E2%80%99s-Review-of-the-Structure-of-its-Representation.pdf)> accessed 26 May 2020.

<sup>82</sup> Mervyn King, 'Mervyn King Speech at the University of Exeter' (Exeter, 19 January 2010) 8 <[www.bankofengland.co.uk/speech/2010/mervyn-king-speech-at-the-university-of-exeter](http://www.bankofengland.co.uk/speech/2010/mervyn-king-speech-at-the-university-of-exeter)> accessed 26 May 2020: '[...] the legitimacy and leadership of the G20 would be enhanced if it were seen as representing views of other countries too. That could be achieved if the G20 were to metamorphose into a Governing Council for the IMF, and at the same time acquire a procedure for voting on decisions'.

<sup>83</sup> Emiliios Avgouleas, *Governance of Global Financial Markets: The Law, the Economics, the Politics* (CUP 2012) 440ff.

<sup>84</sup> Jones and Knaack (n 19) 203.

<sup>85</sup> Macchiavello (n 7) 229.

country that seeks to adopt a centralised strategy for addressing the financial risks associated with financial exclusion but nevertheless confronts institutional and legal challenges regarding data protection and privacy. In contrast, China has taken a different approach to data regulation and privacy that allowed a small group of Big Tech and financial technology companies to dominate the market in providing consumer financial and payment services while being subject to much less stringent regulations in respect to data protection and privacy. International initiatives to adopt principles and standards for regulating the provision of data-driven financial services will need to be developed further to support countries in finding the right balance in utilising data-driven finance to enhance financial inclusion while ensuring that other regulatory objectives are met.

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