South African Reserve Bank

Keynote address by Francois Groepe,
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Regulatory responses to FinTech developments

Introduction

Programme Director, distinguished guests, ladies and gentlemen.

I would like to start by thanking the organisers for the invitation to address you at this year's Strate GIBS FinTech Innovation Conference. The conference is timely as we potentially face one of the most severe innovation- and technology-driven disruptions to products and services, particularly in the financial sector space.

Arvind Sankaran, an advisor on FinTech, argues: "We are witnessing the creative destruction of financial services, rearranging itself around the consumer. Who does this in the most relevant, exciting way, using data and digital, wins!" To paraphrase the famous Austrian-born economist Joseph Schumpter: it is the process of industrial mutation that revolutionises the economic structure within, incessantly destroying the old one, incessantly creating a new one, a prominent feature of capitalism – which he further describes as the 'perennial gale of creative destruction'.

My address today will focus on regulatory responses to FinTech developments.

FinTech developments viewed from a regulatory perspective

Over the last decade or so, FinTech has attracted attention from many quarters; publicity around FinTech developments continues to increase.

Interestingly, some parties suggest that FinTech may offer revolutionary changes, such as completely new ways of banking where peer-to-peer lending arrangements, for example, may displace more traditional intermediaries. By contrast, others suggest that this type of innovation is not different to that experienced in the past. Moreover, like the Internet, these innovations are likely to integrate existing value chains and business processes that will give expression to a symbiosis between new FinTech firms and incumbents. Along these lines, others still argue that developments in the FinTech space are merely part of an evolutionary process driven by innovation – that this is therefore nothing new and that regulatory regimes are adequate to deal with these developments.

Given these varying perspectives, regulators continue to reflect on how to respond to developments in the FinTech space. I believe that the following three proposals could serve to strengthen regulatory approaches to FinTech developments. These are:

i. focusing analysis on activities involving financial services rather than on firms or technologies;
ii. continuing collaboration between local and global regulatory authorities; and
iii. investigating and deciding on the most appropriate structures, such as sandboxes, to keep abreast of FinTech developments and to allow for demonstration of the technology and experimentation with user cases.

These three approaches are not mutually exclusive and are of importance in developing sound policy stances for FinTech. I will address each of these in turn.

Focusing analysis on financial services activities

FinTech is developing rapidly. It has a vast scope that touches, among other things, on chatbots, artificial intelligence, block chains, cloud computing, and smart contracts. Given the pace of change, regulators, like most mortals, may find it hard to remain up to date with these developments; we are faced with the daunting prospect of having to reflect on the most appropriate regulatory responses to technologies that we may not fully comprehend yet.

In this regard, I favour a 'back to basics' approach. Regulators should focus on regulatory principles that are risk-based rather than creating excessive rules-based regulations aimed at these technologies or products. For example, financial regulators do not regulate the Internet, biometric technology, or mobile devices. Regulatory intervention should be appropriate and applied to the underlying economic function. In the case of most central banks, the regulated activities should fall within the ambit of their regulatory mandate and would typically include deposit taking, payments, lending, insurance, and investments.

The Financial Stability Board describes FinTech as 'technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services'[1] by focusing on the identified activities. In this regard, the focus centres on business process innovations and de-emphasises both the entities and the emerging technologies.

Through this lens, we identify four areas of economic activities and potential areas of financial services provision.

New forms of money or value storage

The concept of virtual currencies is increasingly recognised. As people become more familiar with the concept, it has the potential to become more widely adopted. The 'traditional' currency issued by the central bank, also known as 'fiat

[1] *Financial stability implications from FinTech supervisory and regulatory issues that merit authorities' attention*, 2016, Financial Stability Board

money', has the advantage that its issuer is a trusted third party. However, it is conceivable that other trusted third parties may emerge issuing virtual currency in the future.

Virtual currencies that utilise advanced cryptography have enabled the issuance of private crypto-currency. In particular, Bitcoin and its underlying enabling technology, the blockchain protocol, has created the capability to exchange value on a peer-to-peer basis.

In the words of Thomas Carper, a US Senator, 'virtual currencies, perhaps most notably Bitcoin, have captured the imagination of some, struck fear among others, and confused the heck out of the rest of us'.

According to the website coinmarketcap.com[2], the total market capitalisation of more than 800 different virtual currencies is about US$146 billion, of which Bitcoin makes up approximately 47%, followed by Etherium, Ripple, and Litecoin[3]. This is still significantly lower than the current value of all money (approximately US$84 trillion) or physical money (approximately US$31 trillion).

Although much lower in value, virtual currencies are emerging as a new form of money and/or a new 'store of value' that is 'held' within a network of computers. The underlying technology, such as the distributed ledger technology (DLT), although immature and still needing to be fully proven, could serve as a means to possibly reshaping financial services. Potential applications include general banking activities, trade finance, insurance, and payments.

However, virtual currency is not without controversy. According to a paper issued by the Financial Action Task Force on Money Laundering (FATF) in 2014[4], one of the challenges facing regulators, the private sector, government as well as law enforcement agencies is the lack of a common understanding of virtual currencies, including how virtual currencies operate, the potential risks associated with them, and the vocabulary used to talk about them.

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2 https://coinmarketcap.com/charts/

3 www.coinbase.com

4 http://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf

Payments

The second set of innovations that affects financial services is the transfer of value undertaken through the effecting of payments. Due to its nature, the payment environment lends itself to being a 'natural testing environment' to allow for developmental innovations such as FinTech. Attention has been drawn to innovations such as SamsungPay or ApplePay, which have created the ability of paying with your mobile device, using your smartphone as a point-of-sale device[5]. A preliminary analysis conducted by the South African Reserve Bank (SARB) reveals that these innovations leverage existing payments infrastructure and that these new firms integrate themselves into existing value chains. Whether these innovations will fundamentally reshape or disintermediate existing business models remains an open question.

In addition, new payment business models are emerging where current DLT solutions are applied to extended value chains. An example includes cross-border remittances where FinTech firms use DLT solutions to streamline the remittance value chain. The new business processes remove intermediaries, thus lowering costs and reducing the time taken to effect these payments and remittances. Against this backdrop, the SARB continues to monitor payment use cases involving DLT closely. Other activities include the use of social media and other emerging platforms such as WeChat and AliPay. Innovations that remove friction in the system, but also reduce transaction costs and information asymmetries are encouraging but, as regulators, we should be mindful of the risks and social costs.

A FATF report[6] highlights some of the risks when virtual currency is exchanged for real currency. These include money-laundering and terrorism financing. As virtual currencies permit anonymity, they are ideally placed to be traded on the Internet (which then becomes the 'darknet') and allow for anonymous funding activity. The traditional 'know your customer' philosophy and the tracing of funds become

[5] Examples include Square and Zettle.

[6] http://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf

nearly impossible. An unintended consequence of these developments may be increased regulatory costs.

Lending

The third major domain of financial services that may potentially be impacted by FinTech developments is the provision of credit. Online peer-to-peer and equity crowd-based funding platforms have provided alternative financial services options. These platforms connect investors to borrowers and disintermediate the traditional lending by banks and other service providers. Some of these platforms have grown rapidly, providing consumers and small businesses with opportunities to access credit. Regulatory authorities, however, have to balance this with concerns regarding issues such as the protection of consumers, investors and lenders alike, liquidity, procyclicality, general business risk[7] as well as the unintended consequences that these activities may potentially have for the traditional banking models.

Investments

The so-called 'robo-advice' and high-frequency trading (HFT) are FinTech innovations in the investment domain. 'Robo-advisors' are a class of financial advisors that provides financial advice and portfolio management services online, with minimal human intervention. The software that is used for these services utilises its algorithms to automatically allocate, manage, and optimise clients' assets.

Similarly to 'robo-advisors', HFT firms have established themselves as notable participants in the financial markets. The *Financial Stability Review* published by the Banque de France in 2016[8] highlights that HFT firms have two characteristics which enable them to carry out very large numbers of small trades with short−term investment horizons (often intraday), namely:

[7] This would include, as an example, the structure of the platforms' balance sheet.

[8] Banque de France, 'Constructing the possible trinity of innovation, stability and regulation for digital finance', *Financial Stability Review*, April 2016

i. ultra-fast access – just a few milliseconds – to trading platforms and market information; and
ii. trading algorithms that operate autonomously without human involvement when markets are open.

The rapid development of HFT firms takes advantage of low entry barriers. These financial services providers tend to be non-banks with small or even negligible amounts of capital compared with the traditional market makers, i.e. the banks, whose regulatory capital requirements for trading books have increased.

The rapid growth of these activities has attracted the attention of regulators due to the impact and potential systemic risks that HFT companies may unleash on financial markets and market stability. An example of this is short-lived but severe market crashes, such as the 'Flash Crash' in the US markets in May 2010[9].

In summary, FinTech innovation can be observed across multiple financial services, including deposit taking, payments, lending, and investments. An in-depth analysis of the activities rather than of the technologies and/or firms providing these services helps one to understand these developments. New technologies will continue to present opportunities to reshape financial services. I would like to suggest that policymakers should focus unrelentingly on financial services and their underlying activities, as opposed to the ever-evolving technologies *per se*. Such a focus will most likely ensure appropriate regulatory treatment of similar activities, irrespective of the entity providing such activities, and will thus aim to better achieve level playing fields.

Continuing collaboration between local and global authorities

I would now like to turn to the importance of continued collaboration by regulatory authorities. Given the fast pace of change and the global nature of these innovations, collaboration between regulators is important.

[9] On 6 May 2010, a 'Flash Crash' occurred in the US markets. HFT allows firms to submit orders and execute trades (using algorithms) and to interact with markets in unpredictable ways, causing price pressure and dislocation of financial markets (albeit momentarily).

At the domestic level, the SARB's involvement in monitoring FinTech innovation started in 2013 when it joined an informal intergovernmental working group (IWG) in our jurisdiction. This work group was established to better understand virtual currencies such as Bitcoin and their regulatory implications. The IWG consisted of National Treasury, the Financial Intelligence Centre, the South African Revenue Services, and the SARB. In 2014, the working group issued a user alert on virtual currencies through National Treasury. The SARB in turn, through its National Payment System Department, furthermore issued a position paper on virtual currencies later that same year.

In 2016, the SARB established an internal Virtual Currencies and DLT Working Group. In recognising the growing evolution of cryptocurrencies, the SARB tasked this cross-disciplinary working group to research and analyse the evolution of user cases of emerging technologies, including blockchain and DLT. The main objective was to gain a better understanding of underlying DLT and smart contracts that leverage these emerging technologies.

Further, by focusing on financial services activities, the SARB has accepted that FinTech extends beyond virtual currencies and DLT. For this reason, the SARB has recently decided to establish a broader FinTech programme, with three dedicated full-time staff members that report directly to me. Although it is at an early stage, this programme will be required to strategically review the emergence of FinTech and assess the related user cases. The primary responsibilities are expected to include the facilitation of the development of refreshed policy stances for the SARB across the FinTech domain. This will be done by robustly analysing both the pros and the cons of emerging FinTech innovations as well as the appropriate regulatory responses to these developments.

A critical success factor of the programme will be the ongoing collaboration with our fellow regulators. We thus continue to work closely with National Treasury, the Financial Services Board, and the Financial Intelligence Centre in an intergovernmental FinTech working group. We will collectively determine the appropriateness of applicable regulatory frameworks and further review how our

frameworks can strengthen policy goals such as financial inclusion and the deepening of competition.

Besides collaborating locally, the SARB actively participates in international regulatory and standard-setting bodies. Work undertaken by the various working groups at the Financial Stability Board and the Bank for International Settlements has been proactive in trying to understand the FinTech phenomenon and robustly explore its benefits, risks and appropriate regulatory frameworks. The SARB has contributed a paper recently published on assessing DLT and its impact on payments and securities markets. Additional work has also been published on the impact of FinTech on financial stability. In addition, work continues on matters such as machine learning, artificial intelligence, and digital currencies issued by central banks. The ongoing global collaboration is vital in order to keep pace with these developments. The SARB is committed to staying abreast of and contributing to global thought leadership on FinTech.

Deciding on the appropriateness of structures, such as innovation hubs and sandboxes to keep abreast of FinTech developments

Lastly, I would like to turn to innovation hubs and sandboxes. The SARB has been following the approaches, adopted by other jurisdictions, to assist policymakers and regulators in staying abreast of FinTech developments given how some lending and payment platforms have grown to become systemically important systems within a short space of time.

For this reason, jurisdictions such as Australia, Hong Kong, Singapore and the United Kingdom have implemented innovation hubs and regulatory sandboxes. Innovation hubs provide support, advice and guidance to firms in navigating the regulatory framework and/or identifying supervisory, policy or legal issues and concerns. Regulatory sandboxes provide the platform for live or virtual testing of new products or services, in a controlled environment, with or without any ‘regulatory relief’. With added attention to FinTech, through the newly established FinTech programme within the SARB, we will urgently review the need for and

appropriateness of innovation hubs and regulatory sandboxes and how to be in a potion to take a firm decision within the coming year in this regard.

Conclusion

In conclusion, I would like to note that we live in an era of ongoing and rapid change which may hold significant implications for the regulation of financial services in response to these changes.

I have suggested approaches that could aid the development of new regulatory frameworks in response to FinTech developments. The first fundamental principle is to focus sharply on regulating financial services provision or related activities. Regulation must, however, be appropriate, purposeful and smart – and it must aim to ensure a level playing field. Regulations should not be an impediment to progress, competition, or efficiency.

The second fundamental principle that needs to be adopted relates to continued collaborating at both local and international levels. In the current age of universal provision of financial services, ensuring harmonised frameworks that limit regulatory arbitrage is crucial.

Lastly, structures such as innovation hubs and sandboxes need to be considered carefully. The success of these structures is dependent on a clear regulatory purpose, open and transparent participation criteria, and measurable success criteria.

Charles Darwin famously said: “It is not the strongest of the species that survive, nor the most intelligent, but the ones most responsive to change.” Significant incumbent financial sector firms and other service providers would need to learn to appreciate that the biggest threat to the sustainability of their business is not necessarily their traditional competitors. It may very well be firms still to be established, that utilise technology still to be developed, and that leverage innovations still to be incubated.

I wish you well in your deliberations and hope that these thoughts have created insights on how we as regulators may respond to developments in the FinTech space.

Thank you.