



South African Reserve Bank

**Remarks by Francois Groepe,
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at the Finovate Conference**

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Fintech: reflections on the phenomenon and its future potential

Good afternoon, ladies and gentlemen.

There is no doubt that we are facing a period of rapid technological advancement and innovative disruption, not least in the area of financial services, with financial technology (fintech) likely to disrupt and redefine both payments and banking value chains.

Given these rapid advancements of fintech, I would like to focus my remarks on two areas.

The first is an appraisal, from a central banking perspective, on the fintech phenomenon, given that we as the South African Reserve Bank (SARB) have been closely observing what has been happening in this space.

Second, I would like to reflect on fintech's potential to advance our South African migration towards a digital economy by reviewing some select examples from a few countries. I firmly believe that fintech has the potential to meaningfully contribute to the growth of our economy.

Fintech: 10 years on

It has been 10 years since Satoshi Nakamoto published his famous paper titled 'Bitcoin: a peer-to-peer electronic cash system'. The paper was both timely and ironic, in that we had just begun to experience the impact and unintended consequences of innovation in financial services that had largely escaped the regulatory radar. Over-the-counter derivatives such as credit default swaps exposed the impact of the types of innovation where there are information asymmetries, misaligned incentives and opportunistic behaviour, highlighting what can go wrong systemically when financial engineering and innovation is not subjected to appropriate regulatory oversight.

The results included failure by lenders to robustly assess whether borrowers had the ability to meet their obligations. Furthermore, risk transfer through the so-called originate-to-distribute models resulted in severe consequences, amplified by the interconnectedness of our financial system. Yet, the solutions that are so often touted by proponents of an alternative to the 'traditional' financial system suggest that peer-to-peer exchange largely outside of the regulatory purview is the way to prevent future financial crises.

So, what have we observed as central bankers as we critically reflect on what's happened over the last decade? And how can these insights assist us as we move towards an efficient and safe digital economy?

The three defining fintech trends: teaming up, new threats, and trials by central banks

I have three observations from the perspective of central bankers related to fintech trends. I position these as 'the 3 Ts': *teaming up* among authorities, the new *threats* arising from fintech, and lastly *trials* by central banks.

Teaming up

First, the fintech phenomenon has brought central banking and the larger regulatory community closer in working together on analysing and appraising new innovations. We have a long history of working together. This collaboration is strengthened as a result of the nature of the technology-inspired innovations not bound by physical topographies. This is the age of platforms. These can be centralised, as in the case of online peer-to-peer lending or some mobile payment platforms. Platforms can also be decentralised and distributed, as in the case of crypto-assets and initial coin offerings. They can scale with ease using technology such as cloud-computing, and adoption across geographies can happen rapidly. Some can on-board customers due to their digital on-boarding in a matter of minutes. Download an app, upload your payment details, and you could be hailing a taxi anywhere in the world.

Collaborating and working together to understand the impact of innovations that can scale services across borders is important to ensure that there are harmonised approaches and that a regulatory 'race to the bottom' is prevented. This collaboration by central bankers through bodies such as the Bank for International Settlements (BIS), the Financial Stability Board, the International Monetary Fund (IMF) and the World Bank has produced significant analysis in the fields of crypto-tokens, central-bank-issued digital currencies (CBDCs), artificial intelligence and distributed ledger technologies, to name a few. There have also been contributions on fintech more broadly, raising awareness of the fact that fintech is not just crypto-assets. Such work has also drawn out both the monetary policy and the financial stability implications of fintech innovation and the issues that merit regulatory attention.

So, as central banks, we have not been sitting idle in the face of these technological advancements. Whereas in the past regulators often played catch-up, this time around it is noticeable that regulators have adopted a far more collaborative and proactive approach. We see partnerships like Project Stella between the Bank of Japan and the European Central Bank exploring the impact of distributed ledgers. Just recently, the Bank of Canada, the Monetary Authority of Singapore and the Bank of England released a report on alternative models that could enhance cross-border payments

and settlements.¹ This teaming up and collaboration will stand us collectively in good stead as robust analysis is conducted on complex issues, not least due to the cross-border implications of many of these developments.

In South Africa, a FinTech Unit has been established within the SARB. National Treasury, along with the SARB, the Financial Sector Conduct Authority and the Financial Intelligence Centre (FIC), have jointly established an Intergovernmental Fintech Working Group. These are evidence of the importance being attached to staying close to and leveraging the fintech phenomenon.

And this will continue to happen in a responsible and proactive manner. We will continue to strive to keep abreast of fintech developments and endeavour to apply a balanced analysis to the fintech phenomenon, thus contributing towards a conducive environment in which fintech, regtech and supotech can thrive in support of our country's progress and economic development for the benefit of all South Africans.

New threats

My second observation is that it has become clear to central bankers that the fintech phenomenon is not a passing fad and that it does hold significant transformational potential.

However, while there may be benefits, new risks may also manifest. On the positive side, fintech firms are often obsessed with being customer-centric, focusing on the needs and pains of the customer, and providing simplified, convenient, on-demand digital services. As has been noted by Professors Chuen and Teo, given their 'legacy-free and asset-lite' operating models, fintech firms can innovate speedily through agile approaches.² And while there are inefficiencies in any financial service value chain, fintech firms can address these by applying exponential technologies and finding new and innovative ways of providing services.

¹ <http://www.mas.gov.sg/News-and-Publications/Media-Releases/2018/Assessment-on-emerging-opportunities-for-digital-transformation-in-cross-border-payments.aspx>

² H M Treasury, 2016, *UK FinTech*, 'On the cutting edge: an evaluation of the international FinTech sector', available at <https://www.gov.uk/government/publications/uk-fintech-on-the-cutting-edge>

On the other hand, new threats can be introduced through fintech-inspired innovations. Loans can be issued in a matter of minutes using, for example, new scoring techniques by fintech platforms. They leverage social media and apply new techniques such as network analysis, sentiment analysis and natural language processing to unstructured data sources to assess default risks differently.

However, in applying new artificial intelligence and machine-learning techniques, concerns arise about the reliability, validity and transparency of the decision-making process. What goes on inside the so-called 'black box' of new computational learning algorithms? We have all heard about the significant failures of Internet finance companies such as Ezubao in China. Ezubao had been set up as an online peer-to-peer lending scheme in July 2014. It attracted funds of about 50 billion yuan (US\$7.6 billion) from 900 000 investors. It ceased to trade in December 2015, just a year and a half later.³ We have to be vigilant of the new threats that may arise as a result of the application of novel technologies.

Turning to other innovations such as crypto-assets, there are numerous examples over the last few years of exchanges being hacked and invested funds being lost. As has been reported to the Japanese regulator, 5 966 bitcoins were stolen and hackers managed to steal 5 billion yen (about US\$44.5 million) of crypto-tokens.⁴ We have recently seen increased attention by South Korean and Japanese regulators to this domain as a result of these ever-increasing cyber-incidents. With initial coin offerings, the lack of clarity and transparency, with numerous White Papers attempting to raise funds quickly through token sales, is another area of concern.

So while these new business models may bring benefits, their longevity may be challenged if financial, business and/or operational risks materialise. The provision of financial services is a heavily regulated industry. The main reason for this is not just the protection of consumers. As services and systems evolve and become more interconnected, the spillover effects of risks to the financial sector and ultimately to the real economy increase. We've seen these contagion issues during the global financial crisis. I would therefore encourage that our assessment of both the potential and the

³ Gough Neil, 1 February 2016, *The New York Times*

⁴ <https://cointelegraph.com/news/japanese-cryptocurrency-exchange-hacked-59-million-in-losses-reported>

new risks be both honest and realistic. And while innovators put forth the benefits of their innovations, let's engage in a truthful and sober reflection on the familiar and new threats being introduced.

Trials by central banks

My third observation is that central banks are not immune to the impact of fintech. Our role as operator or provider of particular services, as well as how we conduct our supervisory roles, will be affected by the advancement of exponential technologies.

On the provision of services, such as a platform for high-value payments typically processed through a real-time gross settlement system, we have seen waves of experimentation by central banks. Projects such as Jasper in Canada, Ubin in Singapore, and our own Project Khokha have been initiated to understand the impact of new technologies on such service provision. Some of these projects are in their third phase, trialling securities and cross-border payments on a blockchain. Other central banks, such as the Swedish Riksbank and the Bank of Uruguay, have already experimented with CBDCs, or are considering a more retail-focused or general-purpose CBDC.

Of course, as each of these central banks has noted, the issues are much broader than just technological considerations. The policy considerations are weighty. As the BIS has indicated, careful consideration needs to be given to the impact on financial intermediation and financial stability, and to the unintended consequences of such solutions.

To stay on the front foot, so to speak, the SARB is considering hosting a focused workshop on CBDCs in the coming year. We aim to attract the world's leading thinkers on the topic to inform our own policy thinking on CBDCs. Also, several stakeholders are enquiring about Project Khokha's Phase 2, and many have submitted suggestions. We are giving careful consideration to all of this, and hope to make a definitive announcement early next year.

Conclusion: the fintech potential going forward (digitally)

To conclude, I'd like to share a few thoughts on the potential of fintech, looking forward.

The emergence of fintech, the Fourth Industrial Revolution and the continuing shift from an industrial to a digital economy affords us, as a country, the opportunity to leverage these innovations towards lifting the growth potential of our economy. There are anecdotal estimates that such efforts could contribute 0.5 - 1.5% to gross domestic product (GDP).

Digitisation, for example, has reshaped financial services in countries such as China, Estonia and Singapore. Less than a decade ago, the Chinese e-commerce retail transaction value accounted for less than 1% of the global value. This figure has risen to nearly 40% today and, in 2016, mobile payments for goods and services in China totalled US\$790 billion – 11 times more than in the United States. Research by the IMF shows that a 1 percentage point growth in the digitisation of China's economy is associated with a 0.3 percentage point growth in its GDP.

Estonia is a small country, with minimal natural resources, but it is leading the charge in embracing digital enablers across various sectors. An astounding 99% of Estonian companies are established online, reducing the time it takes to establish a business from 5 days to 18 minutes. In Estonia, 97% of healthcare patients have country-wide accessible digital records, with 99% of all prescriptions issued digitally. At least 2% of Estonia's GDP is saved due to the collective use of digital signatures.

In Singapore, citizens have the ability to store their basic identification such as their unique identification number, name, gender, age etc. electronically on a one-stop data repository known as MyInfo. This enables faster completion of online information requirements such as e-Government or banking services.

The examples from China, Estonia and Singapore demonstrate the potential of technological innovation and fintech. If South Africa had to adopt a similar technology, it could be used to administer social grants and could potentially result in significant

cost savings. A further application could see the simplification and streamlining of compliance with the FIC Act.

As the SARB, we have kept a close eye on fintech developments as we appreciate the developmental potential they hold. There is, for example, sufficient evidence to suggest that the pursuance of common infrastructure such as digital identity platforms, or basic citizen demographics being housed digitally (such as MyInfo in Singapore), can promote progress towards electronic transactions and financial inclusion.

In India, their unified payments interface allows one to make payments simply by knowing a person's unique yet simple proxy address.⁵

All these capabilities have demonstrated that digital authentication platforms form the foundation for other financial services. In moving towards a digital economy, identifying new threats, including cyberspace threats, becomes increasingly important. This is why two-factor authentication is mandatory in many jurisdictions for transactions performed online, as is the case for transactions in South Africa. A national digital identity platform enables multi-factor authentication and reduces the cost for each provider doing so on their own.

In closing, fintech holds great potential which can meaningfully lift the growth potential of our economy and significantly improve efficiencies. To nurture this technology, we would, however, need to be alive to the new threats that it may introduce. Hence, we need to team up and collaborate, especially given the cross-border implications of many of these services.

Furthermore, as the SARB, we are committed to ensuring that we make a concerted effort to understand technological changes in an effort to regulate smartly. We will continue to conduct further trials. We will also continue to create an ever more enabling environment by creating innovation facilitators.

⁵ E.g. 'francois@abc'

As a central bank, we are therefore committed to contributing and being part of this journey towards a more inclusive and digitally enabled economy while ensuring that financial stability is maintained.

Thank you.