Michelle Doyle-Lowe: Financial evolution – exploring the shift

Remarks by Ms Michelle Doyle-Lowe, Acting Deputy Governor of the Central Bank of Barbados, at the BITT Fintech Forum "Central Bank Meets Blockchain", Bridgetown, 3 October 2017.

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Firstly, I would like to warmly thank the organizers of this forum for inviting the Central Bank of Barbados to give a few remarks on the rapidly evolving world of Fintech. It is not often that central banks are immersed in what can be considered as 'ground-breaking' or 'evolutionary' financial developments. On that score, let me express my gratitude to our host for being able to speak to you this afternoon.

In recent time the 'hype' surrounding distributed ledger technology and Fintech solutions has been evidenced by the explosion in the number of Google searches being conducted on these keywords. This trend, and even today's forum, reflects the increasing dominance of Fintech, supported by the billions of dollars being poured into Fintech research and development across the globe. Let us first remind ourselves that distributed ledgers at its core, is a computer protocol that allows many participants to record information on a single ledger that is shared among users, so each one sees the same data. The best-known application of distributed ledgers is Bitcoin, which is a decentralized digital currency that is an internet-based medium of exchange. I want to draw the distinction between this and other forms of Fintech, which is broadly defined as the application of computer programmes and other technology used to support or enable financial services.

There are three key differences that we need to be cognisant of related to recent innovations in Fintech, compared to prior technological improvements:

- The first being the fact that today's Fintech is being **more heavily driven from outside of the financial landscape**, as opposed to being led by the traditional market intermediaries. Companies such as Apple and Google via Apple Pay and Google Wallet are responding to customers' demands and aiding the advancement by offering lower transaction costs and more convenient personalised services that leverage the use of smartphones and speedy settlement. All of these are closely aligned with the desire for and expectation of instantaneous access to goods and money. Whereas historically financial innovation in retail financial services resulted in the traditional banking intermediaries remaining dominant players and adopting the technology to suit their needs, this is no longer the case for some of the new technology, which sets the stage for a definitive shift that no central bank can ignore.

- The second difference is that the **invention of distributed ledger technology is now driving the necessity**. Unlike Plato's saying "*Necessity is the mother of invention*", institutions and firms are now searching for, and discovering new ways by which distributed ledger technology can be applied to their day-to-day operations. It is important to also note that not all Fintech innovations aimed at enhancing efficiency are driven by distributed ledger technology.

- The third difference – **the Millennials**. According to the Millennial Disruption Index, a third of Americans ages 15–34 years old believe that they will not need a bank in the next five years.

Given these factors, when the term financial evolution is used, the possibilities are more far reaching than before.

What is the initial response of the Central Bank of Barbados to exploring this shift? We are paying close attention to developments and our evolving role in this paradigm. As issuer of

the nation's currency with responsibility for monetary policy execution and financial stability, our aim is to establish and nurture a financial ecosystem that is supported by sustained collaboration between financial institutions, us the regulator, Government, and entrepreneurs. Of course for this ecosystem to thrive, it is imperative that each participant clearly understands its role. Just last year, the level of engagement required was aided by our then Governor, Dr. DeLisle Worrell, when the Central Bank of Barbados hosted Dr. Simon Johnson of the MIT Sloan School of Management, to facilitate discussions with stakeholders on the potential implications of digital currencies and financial innovation.

Regulators must implement and enforce policies that foster a regulatory environment that will engender the development of the financial ecosystem. Deepening the level of financial digitisation has the potential to bolster settlement efficiency, encourage entrepreneurial activity and to improve the country's overall competitiveness. It is our hope that regulation in this context is not viewed as a hindrance, particularly since it is necessary to engender trust and confidence among financial market participants and to build resilience.

In the early 2000s, our Central Bank advanced its real-time gross settlement (RTGS) payment system and the Automated Clearing House, which are critical pillars of our market infrastructure. We remain committed to the modernisation of the payments system and to facilitating increased use of technology in the financial market. In this context, the Central Bank is willing to examine Fintech initiatives that may increase financial settlement efficiency. The Central Bank has formulated internal working groups to critically examine varied aspects of the electronic payments evolution and to embrace the enabling requirements for payments efficiency. The focus of these groups is as follows:

The Review of Financial Legislation & the Regulatory Framework

This is aimed at adopting the level of regulation required to provide adequate oversight of unregulated entities that are growing in prominence and engaged in offering new Fintech products.

Overhaul of the Payments Infrastructure

To modernise the payment system to address the issue of persons wanting more immediate access to their money and reduced clearing times. This is inclusive of enhanced data imaging, cheque truncation, and retail and large-value payment settlement. Given the need for a more analytical focus, we also need to collect more granular data on transactions to allow market participants and regulators to better understand customers' behaviour, so as to deepen the innovation in financial services.

Analytical Framework for Fintech

The Central Bank's main goal is to understand and assess the mechanics, limitations and possibilities of new technologies, especially as we review options for modernising our own payment system architecture. This framework is aimed at keeping the Central Bank abreast of developments and to leverage lessons that can be learnt from other emerging-market economies that have made greater progress in many respects. For example, India has bio-metric identification cards linked to e-accounts and in Kenya, social security benefits are received on smart phones. What institutional agreements, access to consumer information and security protocols were required for these types of initiatives? Should we envision a reality where countries migrate to a system where all citizens are issued with e-wallet accounts, to promote e-payments for financial transaction involving government? How should these accounts be backed by central banks and should they accrue interest?

For the Central Bank, other critically important questions to be explored include: **How can this new technology enable the further digitalisation of our economy? What role does**

Government and regulators need to play? At this defining moment for innovation in financial services another very popular question is, **"Do distributed ledgers represent an evolution or revolution?"**

To frame our thinking, we need to also touch on two follow-on questions:

- **Is this change likely to be disruptive?**
- **What is yet to be determined about this new technology?**

Advocates for distributed ledgers suggest that the technology could create disruption within the financial services industry by making processes more efficient, whether related to cross-border payments or digital identities, making it the next biggest innovation since the Internet. From a regulatory perspective, distributed ledger technology can be especially effective in the reduction of fraud and anti-money laundering efforts, since several industry observers believe that illegal transactions continue to thrive in the current system, despite the anti-money laundering and combating financing of terrorism regulations.

At present, the majority of banking systems are housed on centralized databases, making them more susceptible to cyber-attacks since all the information is stored in one place, and some banking systems are out-dated and susceptible to new forms of cyber-attacks. Given that the distributed ledger technology stores, encrypts and verifies every single bit of data in a transaction, any data breach, fraudulent activity, or trades with flagged entities would be made immediately obvious to all parties who have permission to access the data on the ledger. This is especially pertinent since data stored on a blockchain is immutable and irreversible therefore the risk of duplication or errors would be greatly minimized. Furthermore, regulators would quickly realize the benefits of easily auditing and tracking all financial transactions.

Various studies have determined that by employing the use of distributed ledger technology for Know Your Customer (KYC) requirements, banks would not only reduce operational and compliance costs, but also increase the efficiency of their compliance processes. Using the technology, access to KYC data can be shared by banks and accredited organizations would have no need for a duplicated KYC process. Ironically, a Goldman Sachs report noted that a 10% reduction in staff could be achieved with the introduction of blockchain technology in KYC procedures, which would equate to US$160 million in annual cost-savings.

Therefore, the response to that very popular question, **"Does distributed ledger technology represent an Evolution or Revolution?"** really depends on who you are asking. From the Central Bank's perspective, it is more of an evolution that is likely to transform our financial landscape. The role of the Central Bank in this process is acknowledged as being focused on maintaining financial stability and promoting economic development. This requires that we foster innovation by working together with key stakeholders, to ensure a smooth transition to tomorrow's evolving financial system in a safe and sound manner, supported by the requisite due diligence and regulatory reviews of new market entrants.

How can this new technology enable the digitalisation of our economy and what is yet to be determined?

In response to the tremendous potential benefits before us, central banks must be open-minded and think outside of the box, while seeking to understand the inherent risks so as to acquire clear approaches to containing these risks. In this regard, the Bank of England (BOE) has been in the vanguard of the evolution of digital currency. In March of this year, the BOE launched its Fintech Accelerator Programme which aims to share developments, trends and insights, to ensure that the BOE is engaged with different Fintech firms and to enable firms with an interest in Fintech to network with a view to supporting the development of the sector. To this end, they recently tested

the use of distributed ledger technology, which aims to make cross-border payments and the movement of currencies more immediate. The BOE has also collaborated to test an artificial intelligence system that allows for detecting abnormalities in financial transactions and for analysing the quality of regulatory data input, as well as recently disclosing its forthcoming version of a real-time gross settlement (RTGS) payment system that will be compatible with distributed ledger technology.

This mode of experimentation by central banks is reflected across the globe. In China research and trial runs on the prospect of issuing its own digital currency have not only been conducted, but a Digital Currency Institute has been established with a research focus on the use of distributed ledger technology and Fintech.

Of note, a recently published BIS study posited the view that whereas cash is the only means by which the public presently holds central bank money, in the future central banks will probably have to decide whether to issue retail or wholesale central bank cryptocurrencies. The Cambridge Centre for Alternative Finance indicated that 20 percent of central banks surveyed expect to be using blockchain technology by 2019. If central banks issue cryptocurrencies, it allows the public to hold these liabilities in digital form. This raises the concern of universal accessibility and whether central banks' settlement accounts should remain available for a limited set of entities, namely banks, or more widely accessed by individuals? Beyond these types of decisions, the consensus by the major central banks that have tested these operations is that distributed ledger technology is not yet mature enough for current adoption. Furthermore implications for monetary policy, payment execution and net clearing and settlement – are yet to be fully assessed. In reality, no one yet knows what the social and economic payoffs to these realities will be.

It is conceptually interesting to fathom an alternative future, such as one in which there is complete disintermediation of banks and even central banks, with state currencies being replaced by decentralized digital currencies. However, the reality is that some form of cash is still likely to be retained, since it allows for reliable 'redundancy' support. At a recent forum a very vivid example was provided, "…even though we have the benefit of LED lights and energy efficient appliances, when the electricity goes off, we resort to candles and flashlights." The reliance on cash is no different, as we were recently reminded in the face of our regional neighbours' natural disasters, when there was mobile phone connectivity or access to online banking services. In short, digital currencies still have a competitive disadvantage as a store of value and medium of exchange, compared to traditional means. As such, even though it is foreseeable that more central banks may issue digital forms of their national currencies to retain monetary policy control, it is likely that these will simply coexist with the physical form.

What else is yet to be determined? Financial institutions, including the Canadian banks that are well-known to us, are working hard to test and adopt new technologies and adjust to new trends. So while the operations of the banking sector may look different in the future as more Fintech adaptation is filtered to our local banks over time, banks will still play a pivotal role in our financial ecosystem.

There are still several developmental hurdles to be cleared for distributed ledger technology to be more widely applied in being transformative to our system. Some of these include:

A Sound Legislative Base to provide adequate market guidance and ensure that there is a level playing field for market entrants.

Regulatory Support to ensure that the regulatory parameters are adequate to build trust by containing risks, safeguarding financial stability, protecting market integrity through rules that guard against money laundering and terrorism financing, provisioning for liquidity support, financial inclusion, consumer protection, and finally compliance with domestic and cross-border

capital requirements.

Cyber Security Concerns require that there are sufficient layers to prevent hacking and protect data privacy.

To address innovation in financial services, there must be active engagement between authorities and the private sector. For example, the Monetary Authority of Singapore engages in official *regulatory sandboxes,* where for a predetermined period regulatory requirements are relaxed, to allow an assessment of the impact and inherent risks of start-up companies. This level of experimentation with technology-driven entities is aimed at ensuring that economic opportunities are not foregone by creating the space to explore innovation. This is something that the Central Bank of Barbados has received a proposal for and is now considering.

In closing, what is evident today is that:

- Innovation in Fintech could have a net positive impact on the financial system, provided that risks are adequately managed. Distributed ledger technology has obvious transformative capacity but there are still important challenges to overcome.

- It is an evolution that presents the opportunity for financial institutions to adapt to market demands and for new market players to join the financial ecosystem.

- We are still at the preliminary stage of exploring the adequacy of the regulatory framework to ensure that it fits with the new realities and vulnerabilities, in this new paradigm.

This is the time for active engagement between financial institutions, new entrants and policy-makers, in order for us to work together to create the right landscape that can unlock the gains of new technology. This means some agreement on governance, standards and protocols, as well as a solid legal framework to allow for the best interoperability with existing systems in the financial landscape.

On that note, I want to leave you with one other question of interest, **"What do you think people will be saying about distributed ledger technology, fifty or sixty years from now?**

Thank-you for your attention.