



# The second renaissance of finance

Technology is fast changing the role of banks, as well as the way we perceive money. But can regulation keep up with these changes?

For much of the last five centuries, the core functions of banks have changed little. Their primary role as financial intermediary between a saver who deposits money and a borrower who receives a loan has remained. This exchange facility lowered transaction costs and allowed banks to 'create money', loaning out more than they had in deposits. This made banks pivotal in capital formation, which is essential for economic development.

But technology is changing both the role of banks and the money they manage.

Opening a new bank account at Tymebank requires only an ID and cellphone number. Tymebank's ATMs are found in Pick n Pay stores and provide all the necessary services. No need for expensive bank branches and employees, keeping monthly fees to zero and transaction fees minimal. The bank had more than 300 000 active clients six months after opening in February 2019.

At the other extreme, Discovery Bank will use big data, combined with behavioural economics, to nudge clients towards making better financial decisions. Then there are the new fintech solutions, including the plethora of cryptocurrencies that have revolutionised the way we think about money.



## What are the consequences of these technologies?

First, new technology is likely to reduce the transaction costs between depositors and borrowers further. This may seem obvious, but for years there was no evidence that computers and the internet had any effect on the unit cost of financial intermediation. In fact, in a 2015 paper by Thomas Philippon in the *American Economic Review*, he called it a puzzle: Why, with all the new information technology available since the 1990s, did we not see bank costs declining? In a National Bureau of Economic Research (NBER) working paper, he updates the data and solves the puzzle: Since the 2008 crisis, costs have fallen significantly.

But who benefits from these lower costs? Will fintech democratise access to financial services, or will it increase inequality? Philippon argues that two forces will shape the answer. Firstly, technology yields increasing returns to scale. He uses robo-advising as an example. Typically, investors find advisers who help them choose their investments. Robo-advisers reduce the fixed costs associated with asset management in a way, Philippon argues, "that is likely to improve access to financial services". Tymebank is an excellent example of such increasing returns from improved technology.

The second force is the use of big data and machine learning. These innovations, Philippon argues, are likely to "reduce unwarranted human biases against minorities", but "will probably decrease the effectiveness of existing regulations". Lenders are using innovative

new sources to judge clients' creditworthiness.

Discovery, for example, would, based on their clients' past health behaviour, be able to better predict their ability to repay loans. Philippon wants to show that these alternative sources of information – scraped from insurance records, browsing histories or social media – allow products to be differentiated for each individual.

Instead of face-to-face meetings, where potential clients are often judged on a few indicators and can therefore easily be subjected to the prejudices of the interviewer, machine learning on diffuse sources reduces the risk of bias. Philippon notes: "Even when engineers suffer from prejudice and somehow embed this prejudice into their algorithms, the prejudice decreases with the precision of the credit scoring model".

But this can only be done if regulation allows it. To benefit from new technologies, governments will have to be far more flexible with regulation that was often drafted for what are fast becoming obsolete technologies. This is also true for digital money. Digital currencies are proliferating, facilitating peer-to-peer transfers of value at speeds previously unimaginable. **These new currencies –**

**ranging from the digital wallets of WeChat to cryptocurrencies like bitcoin – are transcending national borders and reshaping the nature of money, the architecture of the international monetary system and the role of governments.**

How digital money will disrupt the role of money in society, and how governments should react to it, is the subject of an NBER working paper by Markus Brunnermeier, Harold James and Jean-Pierre Landau. They make three predictions. First, digital money will disrupt the traditional three roles: a store of value, medium of exchange and unit of account. They predict that increased competition will force some currencies to

specialise in one of these roles: Facebook's libra as a unit of account, while bitcoin might be a store of value, for example.

Their second prediction is that digital money issuers will try to differentiate their currency by re-bundling monetary functions with traditionally separate functions, such as data gathering and social networking services. They foresee that this will make national currencies vulnerable to "digital dollarisation".

The third is that digital money will shift payments from banks to social and economic networks and platforms, weakening the traditional transmission channels of monetary policy. Governments, they suggest, "may need to offer central bank digital currency (CBDC) in order to retain monetary independence".

Banking will undergo fundamental changes in the next decade. SA's private banks, driven by new competitors, seem ready to take up the challenge. Let's hope the South African Reserve Bank, as it prepares for its centennial in 2021, is geared for the next century. ■

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