



BANK OF ENGLAND

Speech

A Platform for Innovation

Speech given by

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Remarks at Innovate Finance Global Summit, London

Monday 29 April 2019

I am grateful to Eleanor Connolly and Jen Nemeth for their assistance in preparing these and to John Jackson, Richard Lewis, Tom Mutton and Oliver Thew for background research and analysis.

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Introduction

A century ago, John Maynard Keynes resigned as a delegate to the Paris Peace Conference over his concerns about the scale of reparations in what would become the *Treaty of Versailles*.

He returned home to write *The Economic Consequences of the Peace*. In that seminal work, Keynes marvelled that before the war:

“The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth... [or] adventure his wealth in the natural resources and new enterprises of any quarter of the world that fancy or information might recommend.”

Such global trade and portfolio management were made possible by new technologies ranging from the telegraph to the first transatlantic cable.

Replace “telephone” with “tablet” and “tea” with “turmeric latte” and you have not the start of the Twentieth Century but of the Twenty First. The second great wave of globalisation is cresting. The Fourth Industrial Revolution is just beginning. And a new economy is emerging driven by immense changes in technology, the reordering of global economic power, and the growing pressures of climate change.

New Economy – New Finance

A new economy requires a new finance. A new finance to serve the digital economy, a new finance to support the major transitions underway across the globe and a new finance to increase the sector's resilience.

A new finance with products that are more cost effective, better tailored, and more inclusive.

The UK's FinTech companies are creating this new finance. We have just heard from Charlotte Crosswell of Innovate Finance how the UK FinTech sector leads in talent, drive and investment.

But you cannot do it all on your own.

Your efforts will be even more effective if you have the right conditions in which to innovate and the level playing fields on which to compete.

New Finance - New Bank

That's why a new finance demands a new Bank of England.

In this spirit, last year at Mansion House, I announced that Huw van Steenis would lead a review of the future of the UK financial system, including recommendations for how the Bank should respond. In two months, Huw will publish his conclusions and the Bank will announce a number of concrete steps to create an environment for a more resilient, effective and efficient financial system.

To preview our general approach I want to highlight some recent measures the Bank has been taking. The Bank's strategy is to enable innovation and empower competition, while ensuring monetary and financial stability.

Our levers are the hard and soft infrastructure we control:

- Hard infrastructure, such as the Real-Time Gross Settlement (RTGS) system, which lies at the heart of the UK payment system.
- And soft infrastructure, such as our rules, regulations and standards.

To illustrate what this means in practice, consider three examples of how the new Bank can provide a platform for private innovation to serve the digital economy, to finance major transitions, and to increase the resilience of the financial system.

Serving the Digital Economy

First, at the heart of the new economy, the very nature of commerce is changing. Last year, one fifth of all sales in the UK were online. Next year, it will be one quarter. The new economy is more inclusive, offering easier routes to market for firms both large and small, and greater access for consumers both near and far. We are entering an age when anyone can produce anything, anywhere and sell everywhere through platforms such as Tmall, Amazon, Shopify and YouTube.

This new digital economy is placing new demands on finance. Consumers and businesses increasingly expect transactions to be settled in real time, checkout to become an historical anomaly, and payments across borders to be indistinguishable from those across the street.

In parallel, big data is opening up new opportunities for more competitive, platform-based finance of SMEs. Search and social media data are supplementing traditional metrics to unlock finance for smaller enterprises whose assets are increasingly intangible.

This new finance demands a Bank of England that is as open to new providers as it has been to traditional players.

Here's one way we are changing our hard infrastructure in response. The Bank is in the midst of an ambitious rebuild of RTGS¹, which processes over £600 billion of payments every day. Until recently only commercial banks had direct access to it, and alternative payment service providers (or PSPs) had to route through them. That made sense in the old financial world arranged around a series of hubs and spokes but it is increasingly anachronistic in the new, distributed finance that is emerging.

So we are now making it easier for a broad set of firms to plug in and compete with more traditional providers. Responding to demands from FinTech providers, the rebuild will provide API access to read and write payment data.

In July 2017, we became the first G20 central bank to open up access to our payment services to a new generation of non-bank PSPs. Since then, five have become members and there is a growing pipeline of around twenty firms exploring whether and how to join. Wider access will improve services to UK households and businesses and it will bring financial stability benefits by increasing the proportion of settlement in central bank money, diversifying the number of settlement firms, and driving innovation.

Financing Major Transitions

My second example of how the Bank is providing a platform for private innovation concerns the financing of the major transitions shaping the new economy such as the rapid rise of emerging economic powers and the evolving response to climate change.

The transition to a low carbon economy, in particular, will require enormous re-allocations of capital and massive investments in infrastructure—on some estimates as much as \$100 trillion globally over the next decade. Firms that anticipate these developments will be rewarded handsomely; those that fail to adapt will cease to exist. This will have enormous ramifications both the financial system and for financial stability.²

That's why the Bank is transforming our soft infrastructure.

Recognising the need for adequate reporting of climate-related risks and opportunities, four years ago the Bank helped catalyse the private sector-led Task Force on Climate-Related Financial Disclosures (TCFD). The TCFD has now led to a step change in the demand and supply of climate reporting. With over \$100 trillion in assets now demanding TCFD quality disclosures, a market in transition is now being built.

¹ RTGS Renewal Programme: A blueprint for a new RTGS service for the United Kingdom. Available at: <https://www.bankofengland.co.uk/paper/2017/a-blueprint-for-a-new-rtgs-service-for-the-uk>

² Carney, M. (2019). A New Horizon. Available at: <https://www.bankofengland.co.uk/speech/2019/mark-carney-speech-at-european-commission-high-level-conference-brussels>

In parallel, the Bank is overhauling its supervisory approach. Earlier this month we published a Supervisory Statement and Policy Statement³ that together set out our expectations for banks and insurers regarding their governance, risk management, strategic resilience and disclosure of climate-related financial risks. To support the capacity building and the development of best practice, the PRA has just established the *Climate Financial Risk Forum* to work with firms from across the financial system.

The Bank of England is also working with central bank and supervisory colleagues from around the world in the Network for Greening the Financial System (NGFS) to improve climate risk management in the core of the global financial system. Our priorities include the development of a small number of high-level climate scenarios that can be used in future system-wide stress tests.⁴ Next month, the PRA will require insurers, as part of market-wide stress tests, to consider how their businesses would be affected in different climate risk scenarios.

By adapting our soft infrastructure in these ways, the Bank will help ensure that the financial system is not only resilient to climate-related risks but also can take full advantage of the enormous opportunities in a new low carbon economy.

Applying New Technologies to Increase Resilience

My final example of how the Bank is building a platform for FinTech innovation, considers how general purpose technologies, including advanced analytics such as AI, can increase the resilience of the financial system.

As much of life moves online, a trail of data is created. Indeed, more data was created in the past two years than in all the years that came before.⁵ And this data is creating enormous opportunities for the new finance to serve customers better and to manage risks more effectively.

To those ends, the financial sector is investing heavily in the Cloud, Machine Learning and AI. Banking is already the second biggest global spender on AI systems (after retail) and is expected to invest a further \$10bn on AI by 2020. AI-enabled solutions are increasingly important in fraud detection as well as automated threat intelligence and prevention. As some in the audience are exploring, there is also significant potential in credit assessments, wholesale loan underwriting and trading.

As my colleague James Proudman recently described, such advanced analytics are also likely to lead to changes to the way the Bank conducts supervision.⁶

³ Supervisory Statement 3/19. Available at: <https://www.bankofengland.co.uk/prudential-regulation/publication/2019/enhancing-banks-and-insurers-approaches-to-managing-the-financial-risks-from-climate-change-ss>

⁴ Network for Greening the Financial System; First Comprehensive Report 17 April 2019. Available at: <https://www.banque-france.fr/en/financial-stability/international-role/network-greening-financial-system/first-ngfs-progress-report>

⁵ See <https://www.domo.com/solution/data-never-sleeps-6>

The PRA promotes safety and soundness based upon forward-looking, judgement-based supervision, in which we identify the key risks facing firms and set supervisory strategies to mitigate them. As a process, it can be broken down into three simple steps:

- 1) rule-setting and reporting;
- 2) analysis and monitoring; and
- 3) setting and communicating a supervisory strategy to mitigate identified risks.

Each of these aspects of supervision is amenable to automation, machine learning or AI to some extent. Consider rule setting and reporting.

At over 638,000 words, the PRA Rule Book is longer than *War and Peace*. It is also somewhat less interesting and infinitely more complex.

We are currently using advanced analytics to understand the complexity and interconnectedness of the PRA rulebook, to identify ways to simplify our rules, and to make compliance with them easier for firms.

And to explore ways to make reporting more efficient and effective, we are running a Digital Regulatory Reporting pilot, with the FCA, on machine readable reporting requirements that firms' systems could interpret and ultimately automate regulatory data collection.

These initiatives are goods in and of themselves, but they also create the potential to unlock the power of AI in order to improve the quality of our supervision.

Conclusion

When Keynes marvelled at new possibilities, a decade of wealth creation would follow, but its gains gave rise to imbalances in incomes and in trade. When combined with the *Economic Consequences of the Peace*, disaster ensued.

Today, new technologies, the new economy and the new finance have the potential to unlock more sustainable and inclusive growth. Consumers can have greater choice and better-targeted services; small and medium sized businesses can access new credit to grow; banks themselves can become more productive, and the financial system overall can become more resilient.

Most fundamentally, unlike in Keynes' time, the gains from new technologies will not be limited to men or captured by denizens of the City.

⁶ Proudman, J (2018) Cyborg Supervision. Available <https://www.bankofengland.co.uk/speech/2018/james-proudman-cyborg-supervision>.

The new finance must be inclusive, allowing everyone to be better connected, better informed and more empowered.

By adapting our hard and soft infrastructure, the Bank of England will help create the conditions for such innovation to flourish to promote the good of all the people of the United Kingdom.