



Digital innovation, fast payments, global cross-border payments and cyber security

10th Jubilee Conference on Payments and Market Infrastructures

5-7 July 2017, Ohrid.

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The views presented do not necessarily reflect those of the BIS



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CPMI = "Plumbers in suits"?

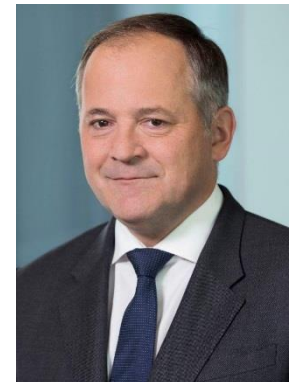


Economist. 6 July 2013



Introduction

- Committee on Payments and Market Infrastructure.
- **Promoting** the **safety and efficiency** of payment, clearing, settlement and related arrangements.
- **Monitors and analyses developments** in these arrangements, both within and across jurisdictions.
- Serves as a forum for central bank **cooperation and coordinates** with IOSCO, FSB, BCBS, World Bank, IMF, CGFS etc.
- Chaired by Benoît Coeuré (ECB), hosted by the BIS, based in Basel, Switzerland. Secretariat of 12.



Agenda

Innovation



**Cyber
resilience**

Faster payments

**Cross border
payments**



Digital innovations

Innovation

**Cyber
resilience**



Faster payments

**Cross border
payments**



Bank of Canada: DLT Won't Replace Canada's Payment System

FSB Warns Of Risks From Emerging Fintech Credit Markets

Fintech possibilities "endless"

ECB warns of DLT fragmentation risk in clearing and settlement

The Future of FinTech and Cybersecurity are Interlocked

DLT May Strain Liquidity

Singapore opens up on DLT trials

Good news – fintech could disrupt finance

Bank of England states central bank-issued digital currency will compete with commercial banks



Digital innovations (cont.)

- Many statements, much interest, less clarity...
- CPMI published an analytical framework to assess the use of distributed ledger technology in payment, clearing and settlement in February 2017
(<http://www.bis.org/cpmi/publ/d157.pdf>)
- Questions:
 - How does this new technology impact central banks?
 - What are the implications if it is embraced?
 - What are the implications if it is not?

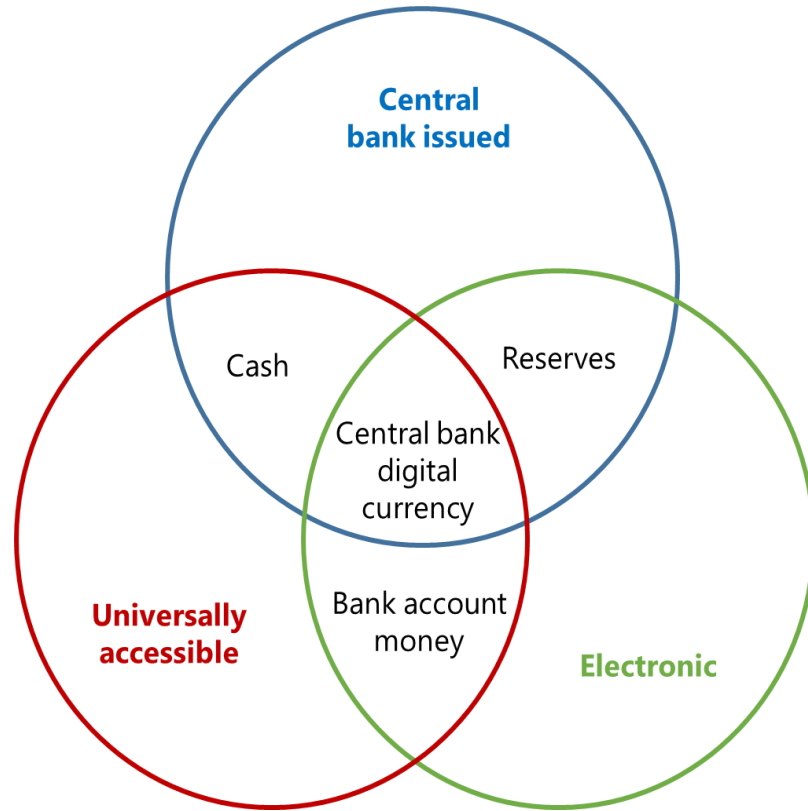


Digital innovations (cont.)

- While discussions continue about the potential implications of cryptocurrencies, DLT etc. there are lots of practical innovations taking place in the payments space right now.
- This year, we even had to update our data collection...
- The CPMI publishes reference works on payment, clearing and settlement systems in the CPMI member countries ('Red Books')
 - This coming year there will be refresh of the Red Book with data that better reflects the recent structural and technological changes in global payments, eg information on:
 - non-banks issuing e-money
 - online and contactless payments
 - card schemes



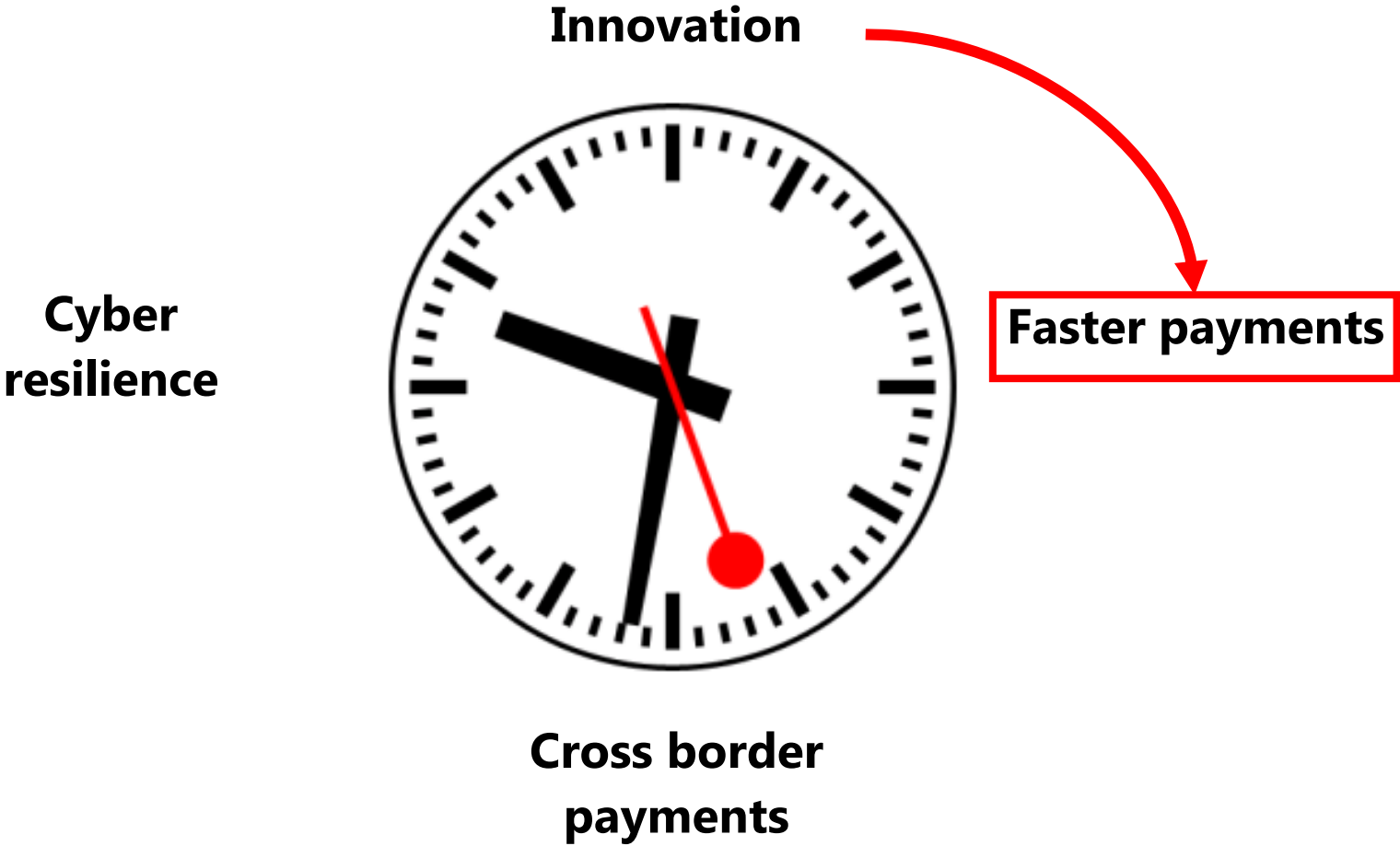
Central bank digital currencies?



Bjerg (2017)



Faster payments

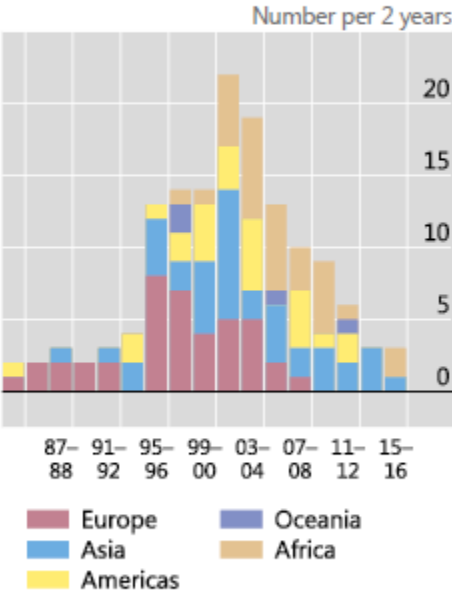


Faster payments (cont.)

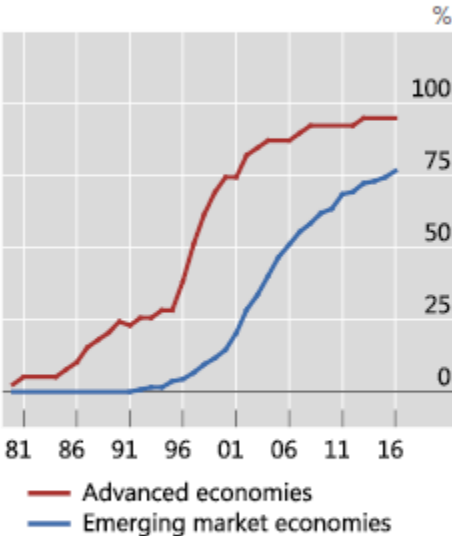
'The quest for speed in payments - BIS Quarterly Review (March 2017)

Diffusion of real-time gross settlement (RTGS) systems

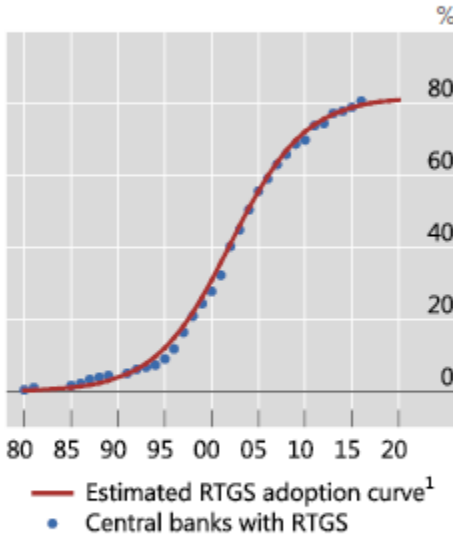
Central banks that adopt an RTGS system



Share of adopters by state of development



Share of adopters



¹ Using a generalized logistic model.

Sources: Bech and Hobijn (2007); Rogers (2003); national central banks; The World Bank Group; authors' calculations.

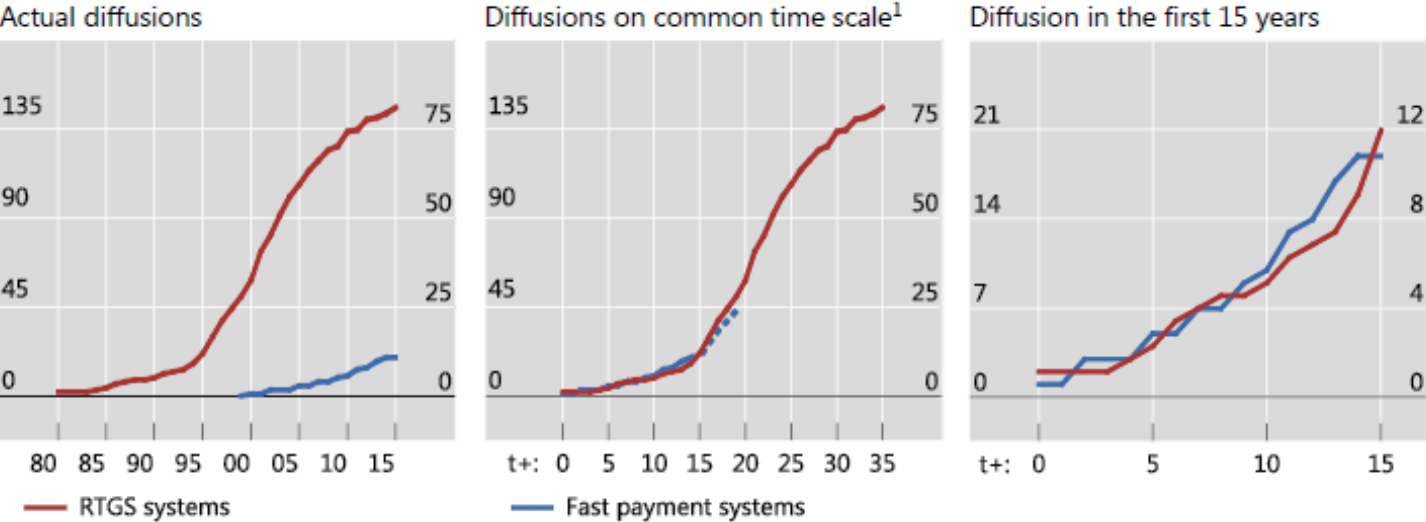


Faster payments (cont.)

RTGS and faster payments - 20 years apart, but a lot of similarities...

Diffusion of fast payment and RTGS systems

Number of central bank adopters (lhs) and per cent of total central banks (rhs)



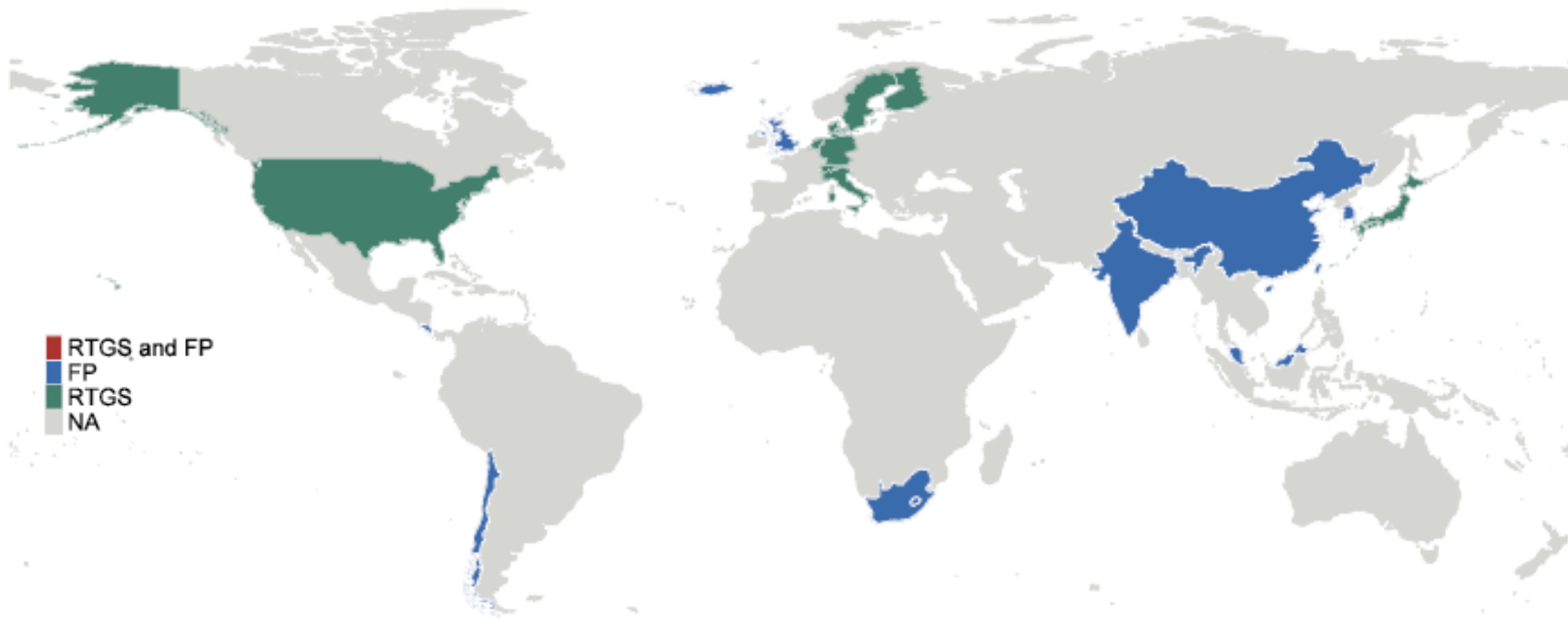
¹ The dashed line corresponds to projected implementation based on public project announcements and assumptions that central banks currently considering a fast payment system would implement one within the next five years.

Sources: Bech and Hobijn (2007); CPMI (2016b); FIS (2015); national central banks; The World Bank Group.

Faster payments (cont.)

Diffusion of RTGS and fast payment (FP) systems across countries.

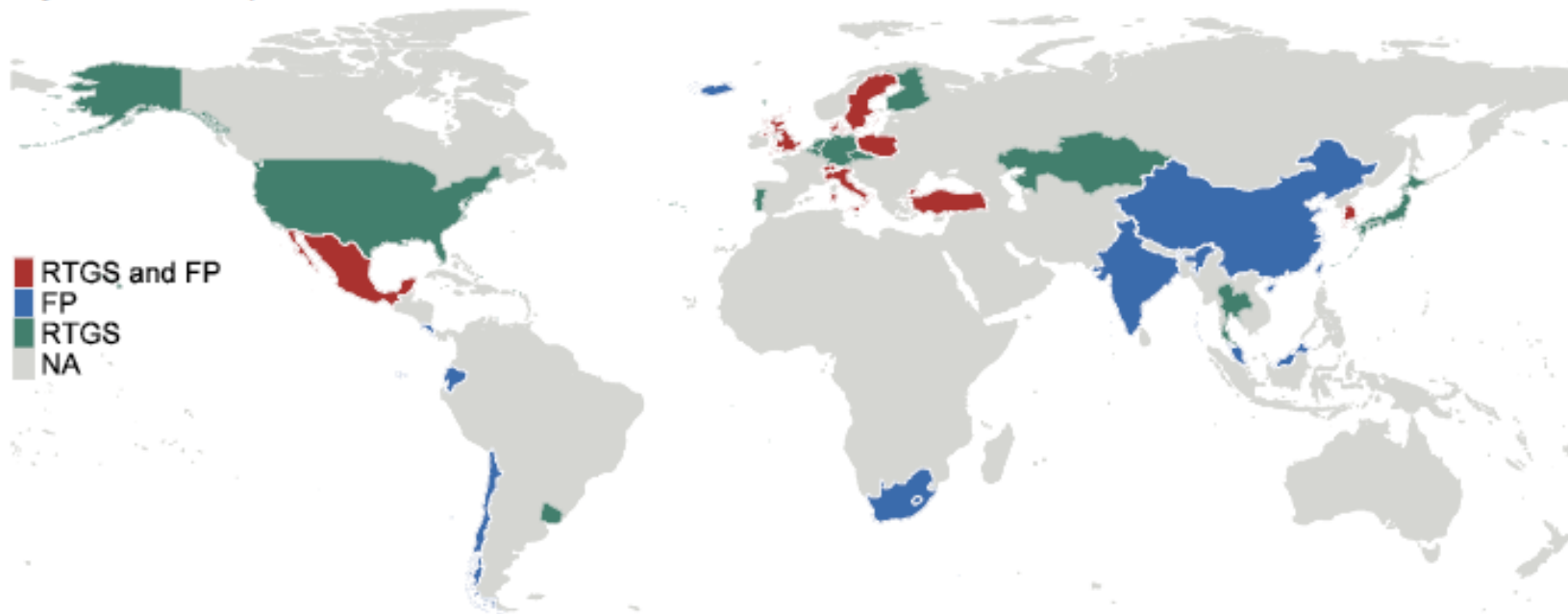
10 years after implementation



Faster payments (cont.)

Diffusion of RTGS and fast payment (FP) systems across countries.

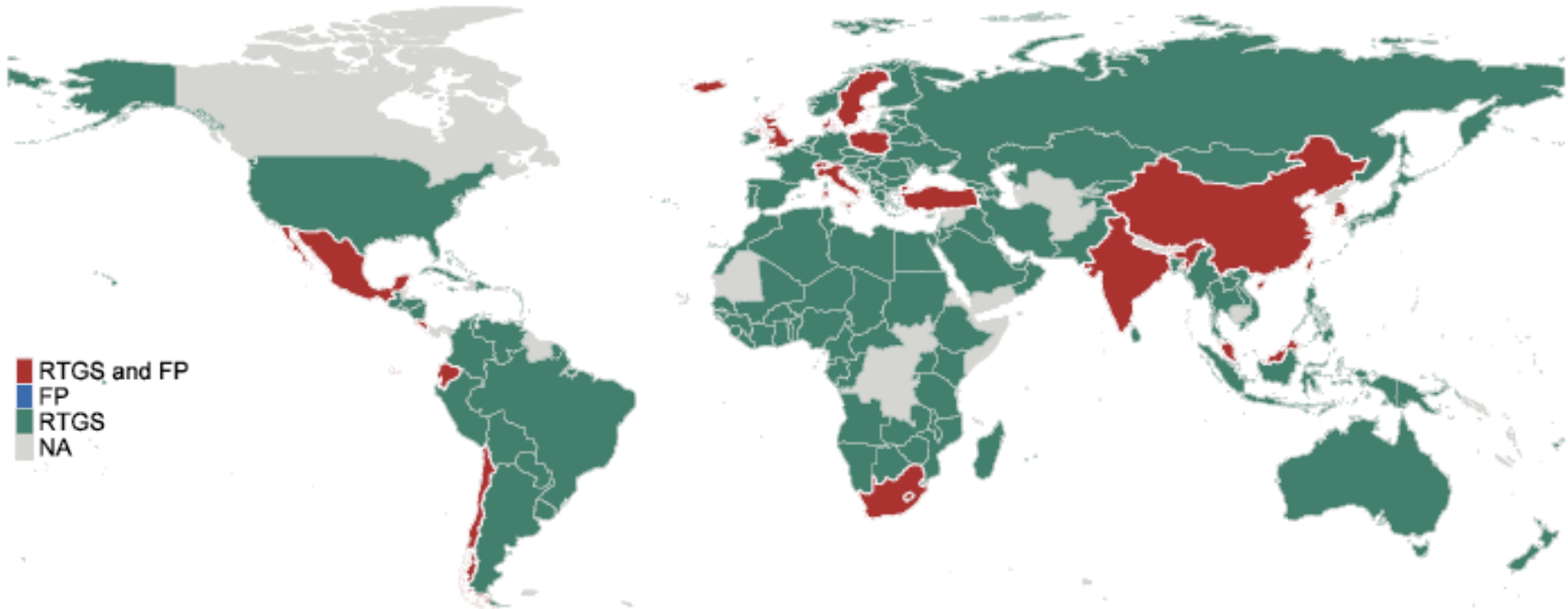
15 years after implementation



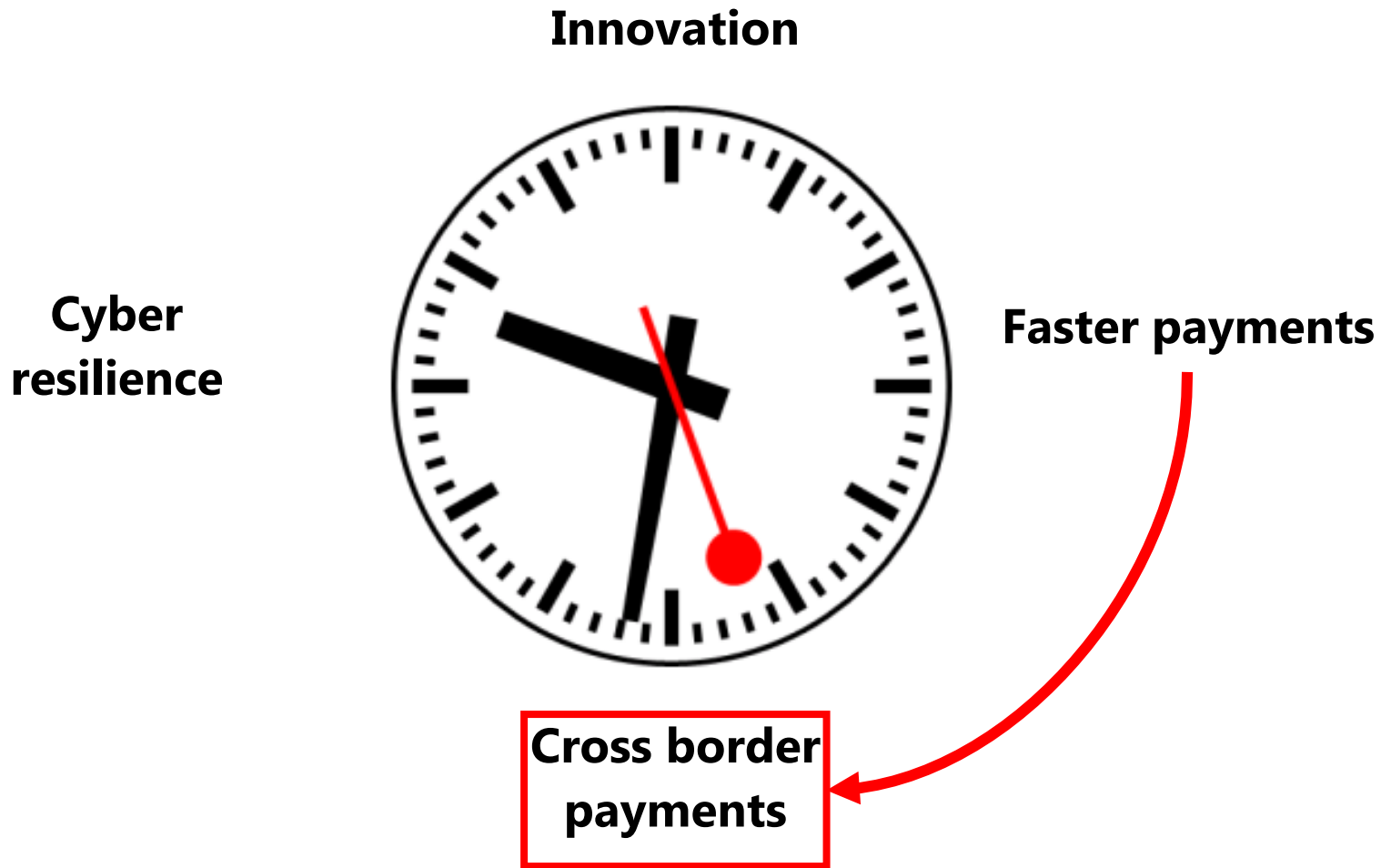
Faster payments (cont.)

Diffusion of RTGS and fast payment (FP) systems across countries.

35 years after implementation

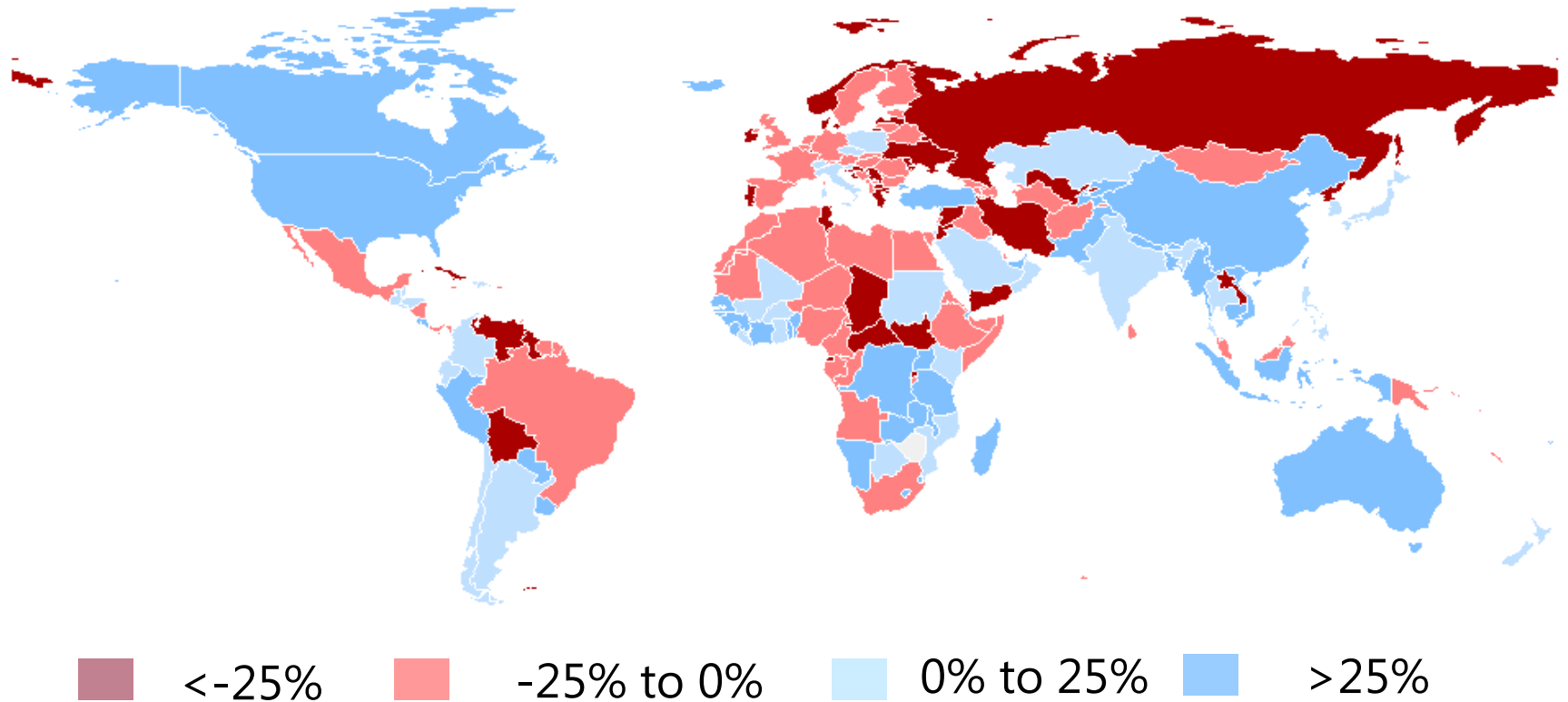


Cross border payments



Cross border payments

Value of correspondent banking payments, change from 2012 to 2015, in per cent



<https://www.bis.org/cpmi/publ/d147.pdf>



Cross border payments (cont.)

- Currently, a lot of cross-border retail payments are inefficient and costly for users.
- There has been some minor improvement from innovations harnessing the internet, mobile technology and non-bank FX services.
- The CPMI is studying some of the barriers and analysing the issues. We have yet to finish the work, but we have seen some positive signs:
 - 24/7 availability of payments
 - international coordination on correspondent banking
 - new messaging standards



Cyber resilience

Innovation

**Cyber
resilience**



Faster payments

**Cross border
payments**



Panic over global cyber attack

Cyber resilience (cont.)

We're facing a global epidemic of cyberattacks, cybersecurity expert warns

PNP on ransomware: Don't click

Global alert to prepare for fresh cyber attacks
Cyber-attack was about data and not money, say experts

Crypto-Locking Ransomware Attacks Spike

Europol: There's no 'kill switch' for malware attack

Wiper Malware Poses Destructive Threat

NATO says a 'state actor' was behind the massive ransomware attack and could trigger military response

The Global Cyberattack Challenge

Petya, WannaCry and the Return of the Worm



Cyber resilience (cont.)

- Published, with IOSCO, cyber guidance in June 2016 (www.bis.org/cpmi/publ/d146.htm)
- Five primary risk management categories
 - governance
 - identification
 - protection
 - detection
 - response and recovery
- Three overarching components
 - testing
 - situational awareness
 - learning and evolving



Cyber resilience (cont.)



Not a box ticking exercise

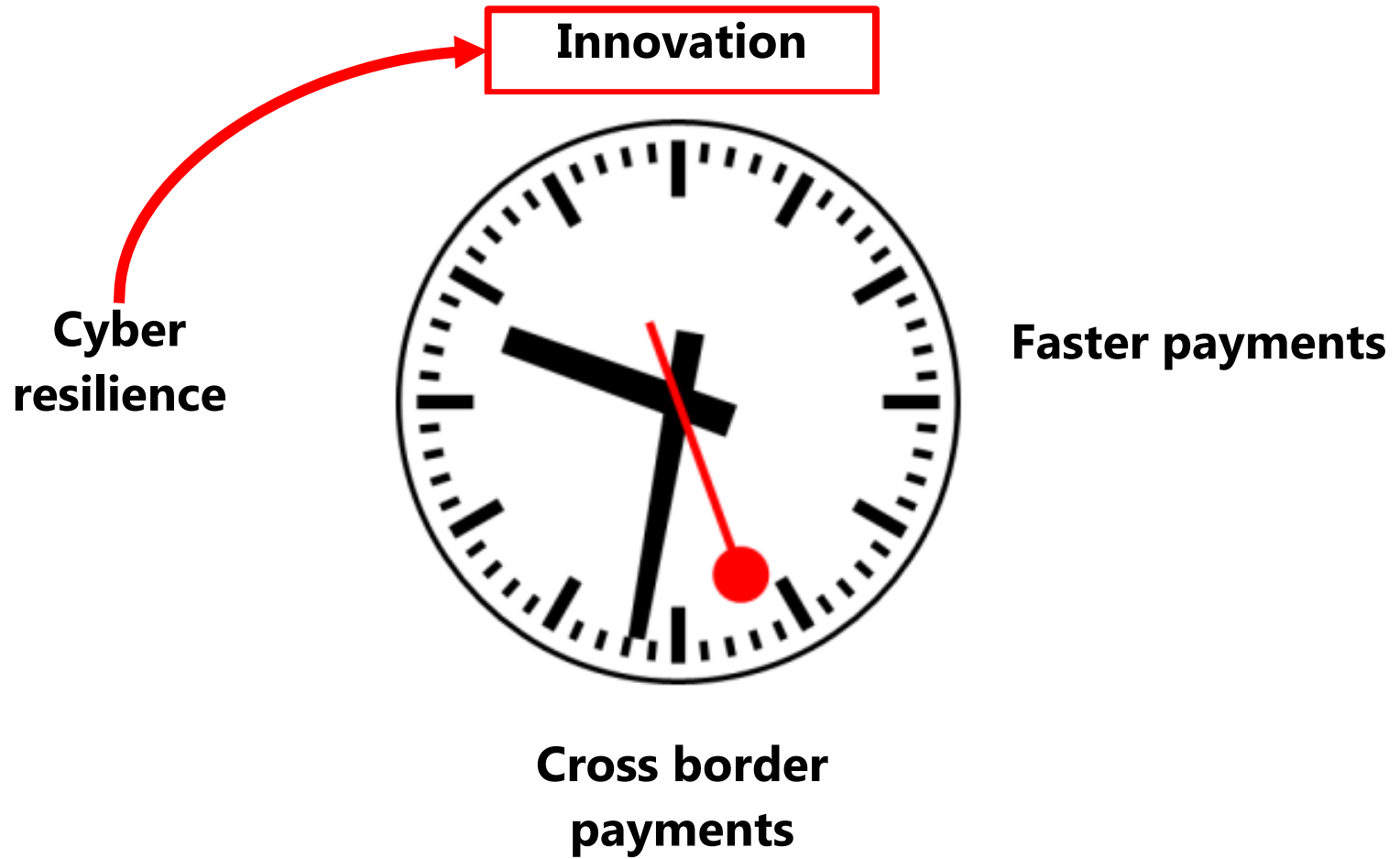


Cyber resilience (cont.)

- Cyber risk (in FMIs)
 - Constantly evolving
 - Pervasive scope
 - Recovery path not clear
 - Entry points are multiplying
 - No limit to the damage a cyber attack can do
- Post guidance, the CPMI's job is not done:
 - Helping others draft guidance and learn from their work
 - Ongoing assessment of financial stability implications
 - Share new thoughts and threat information
 - Encourage collaboration across the financial industry



Agenda



Conclusion

**At all times...
cyber resilience**

**Even later...
DLT? Profound
changes?**



**Soon... more
access to faster
payments**

**Later... improvements to
cross border payments**



Building resilient growth requires international cooperation

87th BIS Annual Report, 2016/17



Many thanks

Any questions?

