



**Banque de France – TSE Conference
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Welcome address by Denis Beau,
First Deputy Governor,

« Digital Finance, market disruption, and financial stability »

Ladies and Gentlemen,

I am very pleased to welcome you all today, for the tenth edition of the Banque de France and Toulouse School of Economics joint conference. This year, we have decided to shed light on how digital-based financial innovations are affecting the robustness and efficiency of the financial system.

It is a good time to talk about digital finance and market disruption for at least two reasons:

- 2018 is both the 10th anniversary of the Lehman bankruptcy and that of Nakamoto's paper underlying Bitcoin.

- those events have unleashed regulatory and market developments and innovations that should contribute to both strengthen and change the role and structure of financial intermediation.

As a result, we see a complex set of interactions, involving competition and cooperation, which are developing between "old" and "new" players and which are likely to coexist in the intermediation space going forward.

"What does that mean in terms of financial stability?" and "how does this coexistence affect central banking?" are two questions open for discussion at today's conference. But for the time being, let me quickly follow two leads.

I. Promises of digital finance: redefining financial intermediation?

First point: The digitalization of finance is prospering on the ground of cutting-edge technologies. The combination of big data analytics, cloud computing, artificial intelligence and blockchain is transforming the way financial products are designed and distributed. For its proponents, this transformation is promising better consumer experiences, a better financing of the economy and a better efficiency of the financial system.

Beyond those promises, **cutting-edge technologies also lower the barriers to entry into the financial sector for Tech firms** and make it possible to unbundle financial services into an array of distinct core functions such as channeling payments and money, providing financing, sharing risk and allocating capital.

This new competition also implies that incumbents' business model should be prepared to adapt: the unbundling of services will challenge business models built around the logic of an exclusive and comprehensive customer relationship possibly involving elements of cross subsidization; more mobile customers could limit the ability to cross-sell products; and higher deposit volatility may unbalance the funding of maturity transformation.

That said, **FinTechs are the talk of the town but BigTechs are the real deal.**

On the one hand, frankly, FinTechs already had a huge and positive impact on the financial sector by developing new solutions and proving that these solutions bring value.

However, overall, with a market capitalization of \$125 bn worldwide, Fintech start-ups have been so far more a complement to existing financial actors, through integration or partnership, than irresistible rivals to incumbents.

On the other hand, the market capitalization of the GAFA – Google, Amazon, Facebook, Apple – is 25 times higher than that of the whole FinTech universe. The BigTechs already have a material footprint in financial services¹ and competitive advantages to expand their activities further in this area.

On top of massive financial resources able to support investment at scale and an undeniable digital agility, they benefit from strong brand recognition, worldwide customer base on which they have accumulated proprietary database and privileged access to forefront technologies.

In that context, **BigTechs more than FinTechs have the potential to fundamentally redefine financial intermediation beyond the universal banking model toward integrating financial services within a universal ecosystem.**

Such a move is already gaining considerable traction in China. And it is raising very fundamental questions to which I will come back.

To conclude my first point, digital finance may not lead to a more decentralized system as the centripetal forces of network effects may profit most to large conglomerates. **Rather than eliminating intermediation, if left on its own, digital finance will more likely lead to reshuffling the cards with the most digitally agile incumbents and the most financially able challengers becoming the new dominant (and potentially systemic) intermediaries.**

¹ Exemples: Ant Financial (Alibaba Group's financial services), Tencent, Amazon, Apple, Facebook. See Ztezsche, Buckley, Arner, Barberis 2017, "From FinTech to TechFin : The regulatory challenges of data-driven finance"

II. A common challenge: Rethinking old issues, investigating new ones

This leads me to my second point. The digitalization of finance forces us to revisit old regulatory and supervisory questions and to face new ones.

Among old issues to revisit, I would like to highlight two of them.

First, the **question of the financial regulation perimeter**. Consider for instance ICOs and crypto-assets: even though they don't bring something new in terms of types of risks², the existing regulatory framework may be inadequate to address the challenges they raise. The classification of tokens into existing legal categories proves very challenging and the internet-based crypto-intermediary activities facilitate regulatory arbitrage.

The same issue applies to 3rd party dependency risk. Just to pick an example, cloud computing market is highly concentrated and Amazon Web Services has built a dominant position. As the core financial functions lift and shift to the cloud, the risk of a single point of failure will emerge, but yet, cloud providers are unregulated and to a large extent out of the reach of supervisors.

Second, **the question of conduct**. Our regulation embeds a judgment of things that are acceptable and some that are not. Technological developments are making it possible to use information that was previously out of reach of a financial intermediary. This would potentially allow a more accurate assessment of risk or a more "responsive" pricing of service. But what is possible may not be (socially) acceptable – to take one example, the current development of "social network informed credit scores" raises privacy concerns. In that context, the regulator (in some cases, the legislator) could have to revisit its stance on conduct issues.

Let me now turn **to new risks** which are non-financial in nature but highly intertwined with the digitalization of finance. Two in particular merit scrutiny.

First, the question of **strategic independence of incumbents**. If incumbents depend on BigTechs for key infrastructure such as cloud computing, if they rely on the same BigTech to distribute their products through their platforms and then compete with BigTechs on certain segments, they see their strategic independence challenged in the same way as hotels and retailers did. This process of commoditization of incumbents may lower credit standards to compensate for higher pressure on margin and exacerbate the funding gap because of lower customer stickiness.

² E.g.: financial conduct, price manipulation, market integrity risks or money-laundering.

Second, **the question of cyber-risk**. With greater interconnections between technologies and the financial system, cyber-risk is moving from an idiosyncratic risk to a potential source of systemic risk.

Whether and how to address the type of issues I just mentioned is a challenging task from a regulatory and supervisory standpoint, as it involves an assessment of both the potential risks and benefits brought to the financial system and the economy more largely, which are by nature uncertain. **It may give rise to a significant array of alternative courses of actions to meet two key imperatives: ensure an adequate level of protection for participants and preserve the potential benefits brought by innovation.**

Let me illustrate this with crypto-assets. Because of incomplete information, a lack of data and the novelty of these monetary and financial objects, four options to tackle them from a public policy standpoint can be considered and have actually been under consideration to drive action: monitoring, isolating, regulating or banning.

Vibrant economic research is needed to help us dealing with these challenges, notably in three key areas.

The first relates to the economics and implications of blockchain and crypto-assets, and will be the topic of David Andolfatto's keynote lecture and of the concluding panel discussion: What are the implications for the financial system in general, and for central banks in particular? Will Central banks' monetary policy become less effective and, if so, are Central Bank Digital Currencies a way to restore their effectiveness?

The second one, which will be addressed by several research papers today, relates to the financing of the economy: Do alternative and innovative ways to finance the economy (marketplace lending, ICOs, alternative scoring models) perform better than traditional financial intermediation without increasing the risks? What roles can incumbent banks play if financial services are to be driven by data?

The third one is not on the agenda for today's conference, but should be on the research agenda, relates to the use of artificial intelligence in finance: What would be the dynamics of financial markets if most participants were to rely on AI and machine learning techniques? How should regulation and supervision practices adapt to ensure that AI behaves in accordance with a financial and social optimum?

Conclusion

I would like to conclude my intervention by quoting Bill Gates himself: “We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten. Don’t let yourself be lulled into inaction”.

The Banque de France tries to follow this piece of advice. To do so, we have adapted our organization and our governance structure with the creation of a Fintech hub within our supervisory function (which has already supported more than 300 FinTechs), the appointment of a Chief Digital Officer and the launch of a Lab to foster innovation within the Banque itself. We are experimenting with new technologies: the Banque de France has been the first central bank to implement a fully-fledged project based on DLT which is now fully operational³ and we have successfully ran 8 artificial intelligence projects. We are also hosting discussions between regulators and the industry: the latest working group on artificial intelligence will deliver its conclusion by end of this year. Finally, as we are doing with today’s conference, we are seeking insights from economic research and trying to be a platform for open debate.

I wish you fruitful discussions, and now give the floor to David Andolfatto, Vice President at the Federal Reserve of Saint-Louis, for his keynote lecture.

³ Madre