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The Digitalization Challenge: Some Remarks from the Perspective of a Central Bank as Technology User¹

Keynote at the 5th Central Bank Executive Summit

Good morning, everybody!
Ladies and gentlemen, dear colleagues!

It's a great pleasure for me to welcome you all here in Vienna at the premises of Oesterreichische Nationalbank on the occasion of this outstanding event, the 5th Annual Central Bank Executive Summit.

I hope you all had a smooth journey to Vienna, enjoyed yesterday evening, and – looking at the program – there is more to come in the course of the next three days.

I am very happy to see so many colleagues from the central banking world and I hope you will find some time to take in the city of Vienna – and to spend some money here.

By way of introduction, let me – at the very beginning of this summit – touch very briefly on some elements that will shape our central banking world over the forthcoming decade, or that will be of relevance for the fulfillment of our tasks at least.

It seems that these developments happen rather quickly nowadays, perhaps much more quickly than the usual frequency of change at central banks, and even if it is neither our habit nor wise to jump on any bandwagon, to embrace any new development immediately, we at least have to understand, (i) first, what is going on and (ii) second, how relevant these developments will be for our own work.

In economics there is this well-known “model of the conservative central banker”! Fortunately, it does not deal with individual habits and preferences of central bankers, but it is about the reaction function of central banks as policymakers and it reflects the expectation of the general public, who

¹ Many thanks to Beat Weber for excellent substantive input to this text.

has entrusted us with the task of maintaining the stability of money and finance via prudent policies.

With regard to technology, the implications are less clear. What I see is that most of my colleagues are very experienced in all kinds of mobile and digital communication today.

Most central banks also try to stay up-to-date with the latest technological developments that serve their interests as institutional users. But being conservative as a central bank certainly also means being skeptical whenever narrow views – or too enthusiastic views - of technological progress conflict with or ignore common sense. I presume it is our joint expertise in economics, finance, banking and many other areas that makes central banks comparatively difficult customers for consultants and suppliers eager to sell the latest technological advances.

But being skeptical does certainly not mean being unreasonable with regard to using new technology. Digitalization comes as an opportunity as well as a challenge to central banks, depending on its specific field of application and its particular use.

Although I am definitely not an expert in technology, let me mention a number of likely or relevant effects of digitalization in several fields of central bank activity. We are all aware that the central banking world has changed significantly in the course of the crisis and in reaction to the crisis. In a similar way, central banks have to deal with the revolution caused by digitalization. It creates a need for change in – potentially –many areas and the management of central banks has to identify the relevant broader perspective of making this change beneficial, successful and meaningful.

Let me very quickly touch upon five selected aspects of digitalization here:

1. Digitalization can be expected to bring the benefit of increased efficiency to existing areas

Digitalization is generally expected to increase efficiency and to reduce costs. This can be the case, for example, in regulation and supervision („RegTech“, „SupTech“) as well as in the integration of market infrastructure systems.

Digital tools may help us to automate and streamline administrative and operational procedures, digitize data and working tools, and improve data analytics. We might one day be technically able to monitor a financial institution’s positions or transactions or client reports live and off-site to prevent noncompliance, or streamline data collection by automating the reporting process of financial institutions. In the end, there may be fewer on-site audits necessary, and reporting may take less time.²

A number of examples for what this may look like will be presented in the course of the conference.

2. Digitalization may help address shifting user demands

Digitalization and the growth of online commerce results in increased user demand for payments in digital form, on mobile devices and at greater speed – in real time.

² <http://res.torontocentre.org/guidedocs/FinTech%20RegTech%20and%20SupTech%20-%20What%20They%20Mean%20for%20Financial%20Supervision.pdf>

In reaction, central banks are induced to adapt their infrastructure, i.e. settlement services, to cope with these needs, in line with the services of commercial banks and other private entities for their customers.

Under special circumstances, some central banks even think about providing greater direct access for retail customers to their payment services beyond cash.

In the Eurosystem, TIPS is a major project in that respect, providing instant settlement in central bank money for instant payment solutions provided by private payment service providers.

Some central banks, for example Sveriges Riksbank, go even further, and also investigate the possible issuance of digital base money to its population.

Obviously, such a step would have huge potential social implications that go far beyond technological aspects: they concern the role of central banks in society, the division of labor within the financial sector and the balancing of privacy in financial affairs.

In this country, it is the conservative attitude and a strong preference for cash of retail customers rather than the conservative attitude of central bankers that makes us feel there is currently no need for any revolutionary change to the existing mix of means of payment (beyond the ongoing adaptations to the payment service infrastructure that are underway).

3. Digitalization may facilitate information management – or rather: the production of analytical knowledge – in some areas

Big data analysis is another important aspect of a digitalized world to be mentioned here. Without going into detail, I would like to point out that it may enrich our statistical analyses and our knowledge about private sector activity relevant to central bank policies.

The development of credit registers is an example, if not a key focus, of many central banks' big data projects, closely followed by administrative sources and the consolidation of internal systems. But, in principle, big data has its potential in almost all fields of central bank activities.

4. Digitalization may create substantial challenges in some areas

Since the decline of barter trade as the dominant model of exchange, money – first privately organized, nowadays provided and guaranteed by the central bank – has become the most convenient form of payment. This basis of our financial system was not challenged for a very long time, despite the rise of new forms of non-cash payments, but seen as an increase in efficiency, and our market economies have developed well on the basis of this model.

Does the – broadly debated – emergence of private cryptocurrencies significantly change this historical picture? At the moment, they certainly do not challenge the role of existing means of payment in everyday life. But they exist, they are used, and even if they are “assets” and not “currencies”, they may be used in payments to foster the circumvention of regulation and control, to pay for illegal goods in online markets, to launder money, to raise capital without investor protection, and ultimately, they create a new kind of financial risk.

From a more general perspective, what seems much more important in terms of changing our traditional financial landscape based on new technologies is the rise of FinTechs. FinTechs are new competitors for banks in their traditional markets – at least in some of them – and the technology they introduce may contribute to increased efficiency and product development in the financial sector. But by restructuring the financial landscape, they also create a challenge not only to bank profitability but also to regulation and supervision.

5. Digitalization is facilitating the creation and dispersion of myths, misleading ideas and misconceptions about money and banking – including what central banks do, what they intend to do and what they should do...

So far, the four selected aspects addressed obviously create new challenges and force traditional market participants – as well as institutions like central banks – to adapt to this new financial world and to deal with the changes it incorporates. At the same time, there are potential benefits of these new technologies and one can expect – or at least hope – that they will increase market efficiency and be beneficial overall.

But there is another side of this coin, which looks much less beneficial and demands very careful analysis and cautious treatment. Let's look at this dark side just to complete the picture and to conclude:

Modern economic systems rely on the division of labor, organized by private corporations competing in markets. Money is the main bond that holds this generally fragmented, decentralized system together.

A crisis – like the one observed in 2008/2009 – reminds everyone that unexpected and unlikely events with a large economic impact can happen from time to time. It reveals that the system depends on the behavior of a huge number of economic agents, in an arrangement that rests on a fragile process of market coordination.

Because money is so essential to the functioning of our economic system, it has attracted all kinds of anxieties in history. Some people even see the existence of (fiat) money as the root cause of all crises. In fact, the basic problem might be that everybody is a user of money and able to use money (and knows that it is helpful to possess money), but hardly anybody understands what the monetary system is and how it works.

Blockchain, the technological innovation behind Bitcoin and similar undertakings, has made it possible to create and transfer digital tokens privately, based on a private algorithm and in a decentralized way (and some people call this “money”), without the need for and the existence of a central institution. But these systems transport very misleading views on money at the same time.

The media hype of recent years around so-called cryptocurrencies has been almost exclusively driven by their use as a “speculative asset”. The term “currency” comes as a complete misnomer in this regard, not least because the inherent instability of the value of these tokens makes them unattractive as a means of payment and unit of account.

Nevertheless their spread and the discourse around them has served to spread and reinforce the idea that ideal money should consist of an indestructible substance of limited quantity, like in primitive commodity money systems.

Such a view is in stark contrast to the institutional realities behind our current monetary system. Here, the key to the stable domestic purchasing power of money is the fact that it is the liability of an issuer that holds assets, managing the resulting balance sheet in order to stabilize the value of money.

This contrast serves as an important reminder that the most advanced technology can sometimes be based on the most backward worldview, like commodity money; and that an innovative technology can create challenges that are largely social in character.

While many industries, including the financial sector, are currently investigating the possibility of employing blockchain and various other technical innovations for various cost-saving purposes, there is no reason to expect that blockchain will, in general, eliminate the function of intermediaries like banks.

To a large extent, financial intermediation and processing payments consists of taking over risks on behalf of customers, not simply of transferring invariant objects between persons (e.g. between payer and payee, saver and debtor etc.). Blockchain might provide a secure, decentralized way for transferring and recording digital tokens, but it neither eliminates nor absorbs risks regarding the tokens' accessibility, value and liquidity. Unless these risks are borne by an intermediary, they remain with the individual customer.

To conclude with:

These examples I have touched upon show that technologies may be able to do a lot of things – many with beneficial effects, some with unfavorable consequences. Central banks certainly have to be aware of technological developments concerning their tasks and working processes. But they have to be very careful regarding the consequences of implementing innovations – in their own field as well as in financial markets. This particularly concerns innovations which might bear a stability risk potential for fundamental institutions in our society like money and banking.

I hope it is with events like this conference that we all can contribute to a deepened understanding of what new technologies may offer on the one hand, but also – on the other hand – to the economic and social context in which technology, whether new or old, has to fulfill its function – hopefully in the hands of people who know what they are doing.

I'm looking forward to a stimulating conference, thank you very much for your attention!