

GLOBAL TRENDS IN FINANCING: Money changes societies, societies change money: What are the major trends shaping the future of financing?

The topic of my speech today is global trends in financing. I was given the freedom to decide how long a trend I will discuss and where the starting point is of the trend that I will cover. So I figured we should start from the beginning, which brings us to the history of money and finance, but I will also extend the trend line through today and into the future, which will be the main focus of the conference today.

The possibilities that technology offers inspire us to innovate and create new and exciting financial services. Yet there are some fundamentals in finance that have remained unchanged throughout history and probably will remain so into the future too. It is always worth remembering those, as the basic things we want from money and financial services really have not changed that much. First, we want stable money that we can trust will not lose much of its value overnight. We want ways to store the money we have earned safely, and if we are feeling more adventurous, then we may want access to ways of investing our savings. We need safe and convenient ways to move our money or use it when making payments for goods and services. And finally it is at times important to be able to borrow some money if we need funding for a business idea or for some other good reason.

It is important to appreciate what exactly money is before we move on to discussing the present and the future of financial services. This is because all financial services are tied to money, whether they are moving it as a payment for a purchase, as a credit or as something else. The invention of money could be called the first fintech solution of early times.

The first role of money is as something that is widely used as a unit of account, which means you do not need to calculate how many bags of beans a pair of shoes is worth. The price of everything can be quoted in a single unit, which in our case is euros. Its second function is to allow efficient transactions, be it with coins, paper money or electronic payments. And last but not least, a reliable money or currency has to be a stable store of value that can be trusted not to lose much of its worth over time.

History has shown that this third function of money has been especially difficult to maintain. Different forms of money, both those based on precious metals and those referred to as fiat money, have struggled to maintain a stable enough value over time. At the time when precious metals were used to mint coins, the scarcity of the metal served as an anchor to price stability. But even this system was not 100% reliable, as creative minds invented coin clipping, where they could carefully shave off a small portion of precious metal from a coin and keep it. This became such a big problem that as early as the late 17th century mints started marking the rims of coins with stripes, text or some other pattern which would be destroyed if the coin was clipped. This might well be one of the main innovations we have seen in minting in the last 300

years. Nevertheless coins have served us well because the idea is simple and the concept relatively robust. Even today coins exist in parallel with banknotes and more modern payment options. I think there is a lesson here – simple solutions may last long and survive the turmoil of innovation that adds new alternatives to an old idea. We should not always immediately disregard the old, even if we think we have found a new and better solution to a problem.

Sometimes we may find though that even if a robust idea can survive the test of time, there are important changes taking place under the surface that count as real innovation. The same applies to issuing coins and banknotes as money and leads us to perhaps the greatest financial innovation of the late 17th century – the establishment of the first central bank! Until then, money had mostly been issued by governments or emperors. Issuing money not only facilitated trade, it was also the easiest way to finance a government's expenses. The temptation always to print a little bit more money usually ended up being too strong, eventually leading to an inevitable decline in the currency's purchasing power.

The first central bank was established in Sweden in 1668, where a single bank was given the right to issue money. There was an understanding that the issuance of money needed to be separated from politics and from the profit motive for the purchasing power of a currency to be maintained credibly. Central banks have a balance sheet that allows them to issue trustworthy currency in a transparent manner. This also allowed for an easier switch from the metallic standard to paper-based banknotes. Ever since then, the credibility of any central bank and its banknotes has been linked to the balance sheet of the central bank, which in turn, depends on the economic developments in the country. Modern central banks have a very clear mandate that gives the highest priority to maintaining price stability.

A clear distribution of tasks, transparency and well-defined mandates for strong institutions have proven to be the key features of reliable monetary systems. This is something that cannot be achieved by a private operator who might also be driven by a profit motive, or by a cryptographic formula that does not adjust the money supply to economic cycles.

So basically for a currency to work we need trust. We need to know that this piece of paper money or the balance on my bank account will still be worth something in the future. Only once you have a currency that people trust can you really have a functioning financial system that offers all kinds of services to businesses and consumers.

The goal of that short history lesson was to build up to the important idea of trust. I believe that trust is the fundamental issue we have to consider when discussing any sort of financial service or innovation. It is often said that banking is based on trust. I need to trust that my deposit at a bank is safe. But the same applies to other financial services. I need to trust that a payment service provider will not somehow lose my money when processing a transaction, and I need to trust that my investments will not suddenly disappear from my broker's account. Some 350 years ago you could have used a copper plate or "coin" that weighed more than 20 kg to buy a cow. The invention of central banks and paper money made such transactions physically much

easier, but both you and the seller of the cow really needed to trust that the piece of paper with numbers on it would maintain its value. Nowadays we use different digital payment methods that may involve even more parties that we need to trust with our money.

I believe that such concerns about the operational, technical and legal safety of any new financial product or innovation are extremely important. I hope we all agree that any financial services we offer to consumers, businesses or investors, of whatever sort, have to be reliable and free of hidden risks.

I am also a believer in the “Lindy effect” – an old idea that was again popularised recently by Nassim Taleb in his book *Antifragile*. This is the idea that the future life expectancy of an idea or technology is proportional to its current age, so that every additional period of survival implies a longer remaining life expectancy. If a bestselling book has been in print for 40 years, you can expect it to be in print for another 40 years. If it survives another 10 years, you would guess the book will still be in print 50 years later. If people have been riding bicycles for 200 years, you should not expect bikes to be replaced quickly by the hoverboards that showed up just five years ago. Similarly I would not expect private cryptocurrencies to replace money issued by central banks any time soon, or ICOs to replace IPOs. Importantly, this certainly does not mean that there is no future for hoverboards, ICOs or innovation in financial services.

There is no doubt that there are many areas in finance that technology can help to make much more efficient, quick, cost-effective and user-friendly. This will all certainly happen. But there are still some basic things that are unlikely to change quickly. Most people will still expect that they can keep their savings safe at a bank in official currency and preferably with deposit insurance. People still expect that the government or the central bank, the distinction between which is probably not that clear for many, will ensure that they can use old-fashioned pieces of paper or metal for payment when the electricity system or the internet is down. Having established that, let me finally discuss what kinds of innovation I expect to see in the future and how I view the role of regulators.

We have already seen that banking and other financial services have changed substantially with the help of telecommunications, internet, big data analytics and other uses of technology. Perhaps it started with the pantelegraph, the early predecessor of the fax machine that was invented in Italy in the 1860s and used for verifying signatures in banking transactions. This has led us to this conference today, where you can use your smartphone to transfer money or give electronic signatures in a matter of seconds, while listening to my speech. You can also access all sorts of other services digitally and at least in this country vote in elections using your computer and a digital signature. About 44% of the votes in the recent parliamentary election in Estonia were cast digitally.

Digitalisation has already changed financial services in many ways, but I believe that two broad themes stand out. First, we expect financial services to be much faster and more efficient, like other services that have been transformed by the internet. And second, digitalisation has in many cases lowered the barriers to entry for new competition. You can open a new payment service or a crowdfunding platform with a relatively modest initial investment, though the bar is still higher for traditional banks or critical market infrastructure providers that are subject to tighter regulation and supervision.

Let's look at some of the developments and their impact, starting with the speed and convenience of financial services. A good example here is that of payments. We have reached a reality where payments are instant and we use mobile banking and other e-wallets to keep track of our money and move it around with a few swipes on the screen.

Global technology companies, also known as Big Tech were the first to create such e-wallets and instant transmission of funds between accounts on their platforms and marketplaces. Today, instant payments are also possible between banks.

Such real-time payments are not only more convenient, but can also add real value by improving the efficiency of supply chain management for businesses or enabling completely new business models. Requesting funds with an instant message and then initiating an instant payment is faster than using cash, which involves searching for the exact amount of banknotes and coins. This means that instant payments could even become the trusted "electronic cash" of our society. Being able to move money instantly and conveniently between people was a major selling point for many Fintech start-ups or cryptocurrencies just a few years ago. By now traditional banks have also got their act together and you will soon be able to move money instantly between any two bank accounts in Europe. SEPA (Single Euro Payment Area) instant payments allow euro transfers between payer and payee accounts at different banks in less than 10 seconds 24/7 and throughout the year. Independent service providers therefore probably need to offer additional value added services, as the convenience of the payment by itself will not be enough to attract customers. There was a good observation in a recent Financial Times column about "evolution in traditional banking catching up with the revolution of the Fintechs". Such competition will of course in the end benefit customers who probably don't care too much about who is providing a particular service, but just want it to be as convenient as possible.

Speaking of new ways of offering credit that technological innovation has made possible, an already quite crowded field is that of peer-to-peer lending or crowdfunding. There are several factors in addition to digitalisation that have supported the development of crowdfunding. First, various regulations and requirements for banks have been tightened since the global financial crisis. The speed of funding decisions and the flexibility of the terms of crowdfunding are often more attractive for borrowers than those of the banks. Second, the proposition is also

attractive to investors, who might find the risk-reward trade-off offered by crowdfunding attractive, or may consider it one of the few ways that they can build a diversified investment portfolio with a modest initial investment.

I therefore consider crowdfunding to be an attractive idea both for investors and as a way of financing projects, especially once we can be sure that all the operational and legal risks related to such platforms are properly handled. Nevertheless I also agree with the conclusions of ECB board member Yves Mersch, who suggested in a recent speech that crowdfunding platforms can fill a niche in the market but never meaningfully challenge the role of banks. That is so for two main reasons. First, lending platforms cannot perform liquidity transformation on a significant scale. This means they cannot use short term funding to offer longer term loans, which is a major function that traditional banks provide. Second, lending platforms are less resilient during shocks, since they are more prone to funding freezes and fluctuations in credit risk appetite than banks are, as they don't benefit from strong capital buffers or deposit insurance.

Another development that we at Eesti Pank are paying close attention to is what is called open banking. This is the concept of third-party service providers having your permission to get access to your bank account information or initiate payments from your account. It will also allow banks themselves to aggregate a customer's accounts from other banks and offer a wider range of different financial services, possibly while integrating the offerings of independent fintech firms with their own platforms.

All of this has been made possible in Europe by the recently updated legal framework – the revised Payment Services Directive or PSD2 and the General Data Protection Regulation or GDPR. The goal of these is to provide strong customer protection while encouraging innovation and fostering a level playing field for payment services providers. The new rules will go fully live in September this year.

A big unknown unknown is the role that big tech companies might have in the future in offering financial services. This includes giants such as Google, Apple, Facebook and Amazon or their Chinese counterparts Baidu, Alibaba, Tencent and Xiaomi. These are global companies that are very well positioned to offer financial services as well thanks to their massive existing customer networks and the amount of proprietary data they have collected on their users. This allows them to provide amazingly smooth and personalised services to customers.

Google, Facebook and Amazon are licensed as e-money institutions in Europe. It would be relatively easy for them to create links to bank accounts and incentivise their users to switch from the mobile banking applications of their banks to instead using the Google, Amazon or Facebook "wallets".

We should also be aware that the big technology firms entering financial markets can bring with them some new risks or negative side effects. They could potentially increase market concentration to a dangerous level. The way they finance their lending activity is a complicated mix of internal funds and money from outside investors that may come with some incentive problems.

This brings me the last part of my speech, which is about public authorities as regulators. We have seen that technological advances have it made possible to provide much better and more convenient financial services to customers. We also know how important it is to make sure that both the services themselves and the companies offering the services are reliable and trustworthy.

A key challenge for both market participants and public institutions is to have the skills and tools to ensure effective detection and handling of the risks related to new technologies and innovative business models. There may be concerns about financial stability, new operational risks, particularly cyber-risk, or consumer protection and data privacy issues. We need to find the right balance between privacy and transparency when using new technology that shares customer information across networks or different service providers. Users of financial services need to be sure that their information is secure.

Financial regulation, strong institutions and supervision are all essential in helping maintain trust in the financial system. This is something that technological change on its own cannot easily achieve. New service providers will need to gain the trust of users. Effective regulation and close cooperation between the public and private sectors will have a critical role to play in this.

As a general principle, regulation should be technology-neutral, meaning that just because a technology for raising money or providing financial services is new does not mean that the responsibilities of those behind it should be subject to different legal or supervisory requirements. Regulation should not discriminate – positively or negatively – between operators because of the technology they use to deliver their services. The best approach for regulation is not to create a parallel universe for fintech companies, but to adapt current regulations to new technological possibilities. For example, we do not need a special law on security-like tokens, but we need to make sure that regulation also covers such new ways of raising capital.

It has been suggested that regulators often face a “policy trilemma”, where you can achieve only two out of three important goals. These goals are (i) to have clear rules; (ii) to maintain market integrity; and (iii) to encourage financial innovation. If regulators prioritise market safety and clear rulemaking for example, they must necessarily do so through broad prohibitions, which are likely to hold back financial innovation. Alternatively, if regulators wish to encourage innovation and provide very clear rules, they have ultimately to opt for simple,

low intensity regulatory frameworks that increase the risks to market integrity. Finally, if regulators look to promote innovation and market integrity, they will have to do so through a complex matrix of rules and exemptions, heightening the difficulties with compliance, international coordination and enforcement.

Governments, international organisations, and the private sector are discussing how to steer fintech regulation. A common line can be highlighted in the desire to encourage innovation and to increase competitiveness while making sure that the risks to financial stability, consumer protection, prevention of money laundering, and ensuring cyber security are kept under control. I am hoping that we can strike a good balance with rulemaking that still remains clear and simple enough while encouraging innovation both here in Estonia and internationally. The benefits of new competition and better financial services enabled by technology that we can all trust are clear.
