DEUTSCHE BUNDESBANK
EUROSYSTEM

Money – Changing Features and Eternal Requirements

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Welcome

Ladies and gentlemen,

It gives me great pleasure to be here at the University of Cape Town today. The University of Cape Town is not only the oldest university on the African continent, but is also renowned for its academic excellence. A stable ranking among the top rated universities in the world is testimony to your outstanding success. Moreover, UCT earned a reputation as one of the institutions exerting sustained opposition to apartheid, particularly in higher education.

South Africa and the South African Reserve Bank are important partners for Germany and the Deutsche Bundesbank. We share common responsibilities in the group of twenty. The 20 leading industrial countries and emerging markets have a particular responsibility for global financial stability and economic growth.

The Bundesbank has therefore chosen to post a representative to the German Embassy here in South Africa in order to foster our joint partnership.

All in all, plenty of excellent reasons bring me to South Africa, where I am very much looking forward to gaining first-hand impressions of the country and the University of Cape Town and to sharing my thoughts with you.

Changing features or "panta rhei"

As member of the Executive Board of the Deutsche Bundesbank, I am responsible for economic education and payments and settlement systems. These topics are closely related to my speech today. And, of course, as a central banker, it won't (Tonne) come as a surprise that I also want to talk about money. Given the tremendous pace and intensity of current changes to payments and to the features of money, I would like to talk to you today about "Money – Changing Features and Eternal Requirements."

When people talk about money in Europe, they are mainly referring to banknotes and coins, as well as commercial bank money in giro accounts. Indeed, in Europe, cash is still king – at least at the point of sale. Even in Germany, cash accounts for approximately 50% of the value of transactions made at points of sale. But at the same time, more than 21 billion cashless transactions were recorded in Germany, i.e. (that is) credit transfers, direct debits (for paying utility bills, for example) as well as card payments.

However, there are many changing features in money nowadays: mobile payments, instant payments, P2P payments, crypto-tokens, stable coins and many more. But it's not just about new forms of money. It's about a whole new landscape, too – the buzzwords here are "blockchain" and "distributed leger technology" (DLT).

The world is changing. Faster and faster, so it seems. Some argue this has to do with technological progress which may speed up.

I believe that most of the perceived acceleration of change is mainly related to improvements in communication. For centuries, even important messages took weeks to be transmitted over long distances.

A letter from the Pope in Rome to the bishops in Northern Europe, say, could take several weeks to be delivered in stages by messengers on horseback.

The time it took for such a letter to be delivered stayed roughly the same from the time of the Roman Empire until the mid-19th century.

In 1844, Samuel Morse sent the first message using Morse code, thereby inventing the concept of electronic messaging. One of the forerunners of digitisation.

This cut the time it took to transmit messages from weeks to seconds. A more pronounced acceleration has never taken place.

However, Morse code was expensive to use, and was therefore reserved for urgent and short messages. Today's choice of messenger services makes worldwide communication almost free of marginal costs, and very convenient. So it is used for everything, and sometimes over-used.

The much faster pace at which we can send messages and data has had an impact on almost every economic activity as well as every social interaction. News and rumours spread faster. But is the news actually more important? Can we see an acceleration in technological progress?

In fact, technological progress as measured by growth accountants has not increased over the last few decades. Instead, it has decreased or stayed roughly the same.

It is certainly true that the recent changes are also the result of the disruptive digital evolution. New players such as fintechs and bigtechs have emerged. But structural change as such is not a novelty. The mobile wallet functions offered by Apple and Google are convenient and innovative. But, in the end, it all comes down to the processing of "classic" credit card payments.

Therefore, I would prefer to talk about the perceived acceleration of change. Fundamental change may be rather rare. In addition, change is and has always been an essential feature of human life.

Around 2,500 years ago, the Greek philosopher Heraklit coined the phrase "panta rhei", which translates as "everything flows". This famous aphorism was illustrated later by Plato. According to his metaphor, you cannot step into the same river twice, because the previous water has flowed away and new water is permanently rushing in to take its place.

Eternal requirements or: fundamental principles

So the question arises: if everything is in a constant state of flux, how can we measure the direction and speed of change? How can we tell temporary spikes from structural breaks? How can we assess the change and determine what actions we should take?

The answer can also be found in ancient Greece, roughly 200 years after Heraklit. The mathematician Archimedes said: "Give me but a firm spot on which to stand and I shall move the earth."

Of course, this statement refers primarily to the functioning of levers. After all, Archimedes was also an engineer.

However, the sentence is also open to metaphorical interpretation: We need a firm spot for measuring and controlling the movement of something else. A firm spot on which to stand could be a fundamental principle. The detection of change requires the existence of something fixed.

So to interpret the ongoing change, let us start with something which we take for granted. I refer to these as "eternal requirements".

I must add a humble caveat here. Nothing man-made is of eternal nature. However, given the speed of change in finance, some aspects of money seem to hold almost eternally, because they have been true for much longer than the internet has been around and, I am convinced, they will survive the current debates.

I am referring to five fundamental principles which could provide suitable guidance for central banks in judging most of the new, emerging features of forms of money, tokens and the like:

1. Money relies on trust.
2. Trust in money is based on fundamental values.
3. The most important feature of money is stability.
4. Stable money requires monetary policy.
5. Monetary policy requires the independence of a responsible institution, i.e. (that is) a central bank.

Principle 1: Money relies on trust

Let me spell out what that means. The first principle, money relies on trust, is the most important one.

If people lose trust in money it will be rendered useless and worthless. Therefore, maintaining trust in money is the most important task of any monetary authority.

The inventors of blockchain claimed that they could create a payment system, including a new sort of money, "without the need for a trusted third party." And the media dubbed blockchain the "trust machine".

However, a closer look reveals a missing link. It is correct that blockchain enables us to send digital tokens. And everyone involved can check that the token has been sent only once by its previous owner. So, blockchain solves the famous "double-spending" problem.

However, the trust in that token – let's call it Bitcoin for the sake of argument – is confined to the virtual world. Bitcoins do not exist outside the blockchain. They can only be transferred across the blockchain and cannot leave it.

A security, by contrast, embodies a claim in the real world. While that security can be transferred via distributed ledger technology, its migration onto the blockchain depends on the existence of a body, such as a central securities depository, to link real, off-ledger assets with the digital world.

And yes, there might be many ways of creating trust among potential users. But it can be only money which is accepted universally in the country in question. It is not enough that a few people or a small group believes that it could be money.

Money is indeed a mysterious topic. How could it be that kauri shells or stone slabs were used as money in ancient times? But this simply shows that money is always a social phenomenon, rather than purely a matter of mathematics or algorithms. And in the end, money must be based on real experiences. Because, in the end, it is not the virtual experience which counts but the reference point in the real world: the possibility of exchanging money for goods – today, tomorrow, next week, and in the coming years.

Principle 2: Trust in money is based on fundamental values

The second principle is: Trust in money is based on fundamental values.

There are two forms of money: money as a good or money as a claim.

Money as a good could mean consumer goods such as cigarettes or commodities such as gold. These have intrinsic value for consumers or producers. And the fundamental intrinsic value is the basis for trust in money.

Money as a claim is the dominant form of money nowadays. This could be a claim on a commercial bank or on a central bank. Ultimately, the safest form is a claim on a central bank. We call that central bank money. So euro coins and notes are counted as liabilities in the balance sheet of the Bundesbank.

And the basis for its value is the stability of the Bundesbank and the Eurosystem as a whole, as well as the integrity of all the central bankers working to guarantee price stability and safe and efficient payments within the euro area. And although monetary policy in Europe is currently the subject of heavy debate, overall, the Eurosystem has done a good job in the past two decades.

In addition, the basis for the stability of the euro is also the constitutional backing of the Eurosystem by its member states and the fiscally sound behaviour of its respective governments.

The euro is underpinned by the entire Eurosystem and all participating countries and their economies.

Crypto-tokens like Bitcoin and others, however, do not have an intrinsic value and do not constitute a claim on anyone; nor do they have a public authority responsible for issuing them in line with a mandate for price stability. They are lacking any fundamental basis. This renders their value arbitrary.

As a result, I do not share the view that crypto-tokens like Bitcoin can be considered "gold 2.0". Attempts to imitate some of the features of the provision of gold, notably a fixed quantity and growing marginal costs for provision, does not mean that you have created something like "digital gold". And that brings me to the next principle.

Principle 3: The most important feature of money is stability

The third principle is: The most important feature of money is stability.

The purpose of money is to be used in payments, to be used as a store of value and as a unit of account.

All three functions require money to be stable.

Therefore, the 2,000 or more crypto-tokens invented thus far are not primarily used as money. Most of them display such extreme volatility in terms of value that people refrain from using them for payments or as a store of value.

In response to the sharp price volatility of many existing crypto-tokens, there have been attempts for some time now to develop crypto-tokens that are stable in value. These are referred to as "stable coins". Stable coins are crypto tokens whose value is often pegged to an existing currency (or basket of currencies) and backed by matching collateral.

So stable coins benefit from a sort of derived stability. This could be interpreted as a compliment to the successful, stability-oriented monetary policy of central banks.

Principle 4: Stable money requires monetary policy

This leads us directly to the fourth principle: Stable money requires monetary policy.

The advent of Bitcoin rekindled a debate about automatic monetary policy. Some people believed that a stable money supply would guarantee stability. The supposed limit of 21 million bitcoins was seen by some as a key to stability.

The facts are different. And the reason is simple. The price of money depends on supply and demand. A fixed supply or a fixed algorithmic increase of supply is by no means a guarantee for stability.

The economy develops, fluctuates and – hopefully – grows. Payment patterns change. The velocity of money changes. All of these factors will result in price volatility if the money supply does not react accordingly.

Therefore, stable money requires monetary policy.

Principle 5: Monetary policy requires the independence of a responsible institution, i.e. (that is) a central bank

And who should be responsible for that monetary policy? I believe in principle 5: Monetary policy requires the independence of a responsible institution, i.e. (that is) a central bank.

We should strive to make an institution responsible for monetary policy. That means supplying money and setting an interest rate so that price stability is maintained. Moreover, safe and efficient payment systems should be promoted so that currency can flow easily and safely.

Trust in money must be accompanied by stable and efficient payment and settlement systems. These do not necessarily have to be operated by the central bank. However, the central bank should at least be responsible for distributing central bank money.

This central bank should, of course, be accountable to the general public and should act as transparently as possible. However, its independence must be guaranteed.

History is full of examples in which unsound public policy has wrongly harnessed the central bank to support and even finance the government. This has led, in all cases, to a lack of focus on stability and has eroded trust in the central bank and trust in the currency.

We should not make the same mistakes as in the past. Because money will only work if the authority remains responsible. If a central bank does not fulfil its task, it will lose trust, legitimacy and, in the end, its money.

A clear focus on stability, central bank independence, and a prohibition government financing via central banks are key pillars of a successful monetary policy.

Looking ahead

Having laid out these principles, it is clear that, notwithstanding any new features of money, the role of a central bank will not become obsolete. A stable currency is and will always be of utmost importance. We need trust.

What does this mean for those modern endeavours of tokenisation, digitalisation and the use of distributed ledger technology? How should we react towards stable coins or crypto-tokens?

As for digitalisation – this is a long-standing tradition in the world of finance. Money in our accounts, bookings in our payment and settlement systems – all these have already been electronically digitalised for decades.

And back in the 90s, in the "electronic" not yet "digital" age, we toyed with the idea of creating "electronic money" as a form of innovative banknotes. Consequently, new regulatory regimes were invented and developed. However, these promises did not become a reality – at least not in Europe and not beyond a few "niche" use cases. In Germany, the card-based e-money product vanished after 20 years of very limited success.

In the end, bringing innovation to fruition is a very complex process – particularly in the network industry of payments. Apart from convenience and safety, cost is a key criterion. Looking at the new technologies, a system based on distributed ledger technology may very well turn out to be superior in terms of transaction costs. In that case, we would be open to adopting it.

The Bundesbank is undertaking its own experimental studies into how we could use blockchain or DLT for payments or settlements. We have discovered that modern versions of blockchain are more than capable of handling the volumes of transactions currently settled in our conventional systems.

However, they are somewhat more resource-intensive and a fair bit slower. So the overall assessment hinges on a cost-benefit calculation over the entire lifecycle of, say, securities. In the medium term, we imagine that DLT-based settlement systems might contribute to reducing overall transaction costs in securities settlement. And we are closely monitoring all related efforts.

This relates only to the technological aspect. We are open to new devices, new settlement techniques or new message systems.

What presents more of a fundamental issue, however, is money.

The fundamental role of central bank money will not diminish. You can see that even the crypto community is betting on the stability of central bank money when it comes to creating stable coins.

And many developers of new DLT-based prototypes have asked us to bring central bank money to the ledger. The question of creating digital central bank money has become a topical issue nowadays.

We have several answers to this. First, today, commercial bank money is used in most cases. We believe that, in the area of retail, digital commercial bank money could also be used in DLT-based systems.

Second, many stable coins are digital commercial bank money.

Third, we could imagine what is referred to as a trigger solution. That means that a DLT-based settlement of any transaction of goods or securities would trigger a payment via conventional payment systems. Perhaps it could even trigger a payment in central bank money, e.g. (for example) via TARGET2 in the Eurosystem.

That trigger solution would make use of the stable and efficient existing payment systems. And in the case of central bank money, the current access to central bank money would remain unaltered.

Fourth, digital central bank money in the form of a wholesale token may be considered if a DLT-based settlement system proves superior to conventional systems. In that case, a token could be issued by the central bank to a closed group and for a limited purpose. Neither access to central bank money nor the supply of central bank money has to change for that. It is again more of a technical question. Repercussions for monetary policy implementation and financial stability could be ruled out.

Fifth, digital central bank money for the general public, i.e. (that is) non-banks, as a sort of "digital banknote", would bring with it a number of knock-on effects that are not very well understood as things stand. If a central bank were to issue digital central bank money for everyone, a potential far-reaching substitution between sight deposits with commercial banks and digital central bank money would result.

In addition, further repercussions for financial stability and monetary policy implementation are to be expected.

To sum up, we have quite a number of ways to bring cash to the ledger. Issuing digital central bank money for everyone is not the only solution. What's more, it is the solution with potentially the furthest-reaching implications for stability, and the highest risk. Therefore, it should not be our first choice. These reservations should not be pushed aside lightly.

Closing remarks

Ladies and gentlemen, times are changing. However, some requirements stay the same.

This is also true with regard to changing structures. Concerns have been voiced that the financial industry, and notably the payments landscape, will change considerably, but not necessarily due to new, small, fast-evolving FinTechs with innovative ideas. In

Germany and Europe, established banks are increasingly viewing FinTechs as "partners" rather than competitors. This is because banks can benefit from the innovative potential of these newcomers, while FinTechs can benefit from the existing customer relations and consumers' trust in banks. The most recent debate instead focuses on the "BigTechs", in particular GAFA (Google, Amazon, Facebook, Apple) as well as the big Chinese players WeChat (Tencent) and Alipay (Ant Financial). This is because these providers have a global and very strong customer base with up to billions of users. They have enormous power and they have excellent digital know how. Most of them, by the way, are already very active in banking and finance.

The announcement of Facebook and other big companies, such as Mastercard, Visa and Spotify, to create Libra might be considered a quantum leap. Are we witnessing the birth of a new, global payment system allowing billions of people without bank accounts to become financially integrated? Will consumers benefit from very cheap cross-border payments? And might we also see a crowding-out of efficient and established payment solutions by convenient "social media" banking?

We should be careful. At the moment, everything is based on one white paper; most of the finer points are yet to be clarified. This is true for the construction of Libra as a "basket of currencies" as well as for details on the overall ecosystem and the underlying technology.

Therefore, I believe that it is too early to arrive at a final assessment of this phenomenon. We simply need more information.

But international authorities have already reached a consensus that these developments must, in any case, meet high regulatory standards. The general equation "same business = same risks = same regulation" is a cornerstone of our thinking, perhaps also a kind of "eternal" truth. Innovation in the financial industry must not lead to a vicious circle in regulation.

Therefore, it is essential to identify what kind of regulations would apply to these constructions. And, in addition, we as a central bank must ensure that we can continue to meet our objectives, that is price stability, financial stability and secure and efficient payment systems.

At the same time, Libra has exposed the weaknesses of global payments: high cost of cross-border payments, long execution times and still a considerable number of people not having access to financial services. This is a wake-up call for us, especially for us central bankers.

It is a call for us to use modern technologies to improve our systems, enhance security and to attain a higher degree of efficiency.

Thank you very much for your attention.