

## **Mojmír Hampl: Central banks, digital currencies and monetary policy in times of elastic money**

Speech by Mr Mojmír Hampl, Vice Governor of the Czech National Bank, at the Official Monetary and Financial Institutions Forum (OMFIF) Roundtable, London, 11 July 2017.

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Ladies and gentlemen,

Good afternoon. Before I start in earnest, let me thank the OMFIF for the kind invitation to this event, which allows me to speak in front of such a distinguished audience. It is an utmost pleasure for me to be here.

The topics of today's session are threefold: cryptocurrencies, central bank digital currencies and monetary policy with elastic money. I'll try to touch upon all of these topics and bind them together, yet I realise the task is challenging.

Let me begin with a story from Prague. In our capital city we have a strong community of supporters and users of cryptocurrencies. Among libertarians, some of them my ex-colleagues or friends from the University of Economics in Prague, bitcoin is seen as a real, fully fledged alternative to the current monetary order. Indeed, I could show you a place in Prague where one can only pay in bitcoin.

By the way, I appreciate the name chosen for the most popular cryptocurrency, bitcoin. In the era when the foundations of the monetary system were based on precious metals, people sometimes "bit the coins" to check whether or not they were counterfeit. In the digital age, of course, biting won't help, and standard counterfeiting doesn't rank among the many problems that bitcoin faces.

Two years ago we held a seminar on cryptocurrencies (and especially bitcoin) at our central bank. When we were preparing for the event, people from the libertarian, cryptocurrency-loving community in Prague asked me: aren't you afraid of us? Aren't you afraid of bitcoin and other independent, central-bank-free currencies and their power to marginalise traditional money?

I said – well, not really. Let's put aside the fact that all of these alternative currencies are still marginal in terms of size and scope (all the electronic transactions using bitcoin worldwide combine to some 16% of the number of electronic transactions conducted in the Czech koruna, a currency used by a mere 10.5 million people). Bitcoin's global market cap also constitutes only a fraction of even the Czech money supply.

The key problem is bitcoin's constantly changing purchasing power. So far it has been more volatile than natural gas, the most volatile commodity. Such a feature is really worrying for any innovation that wants to be seen as money: a means for paying and settling transactions, a unit of account and a store of value.

Let's try to imagine the following: today's five pound note being worth ten pounds tomorrow and then one pound the day after tomorrow. It would be very difficult to exist in such a monetary system, to use the currency in everyday life.

If the money you hold is losing its value, you have every incentive to get rid of it as quickly as possible. If, on the other hand, it is gaining value fast, you want to hoard it and store it. In any case, swift changes in purchasing power are the mortal enemy of any good currency.

Some bitcoin enthusiasts put forward that this problem will moderate over time as more and more bitcoins are mined and the "velocity" of bitcoin money demand increases with more

universal acceptance of the cryptocurrency. I don't think so, since there is no guarantee of purchasing power stability for any commodity-based money.

Its key principle is exogenous "money supply", which in my eyes invites inherent volatility in value. From this perspective, bitcoin is the antithesis of our elastic money system, which is based on the notion that to keep the value of money and purchasing power relatively constant and predictable, the amount of money has to change flexibly over time. This is the lesson of the late 19th and 20th century in monetary policy: price stability matters.

People take this as such a self-evident statement that typically they do not even think about it and take it for granted. But this observation does nothing less than confirm the most beneficial feature of our money and the monetary policy behind it – people use the currency and don't have to think about why, in fact, they trust it.

Our fault as central bankers is that we have been unable to explain, at least in many developed countries, that one of the key reasons for the actions we took during and after the Great Recession was simply to keep the price stability, i.e. to keep the purchasing power of money relatively constant and predictable. Yes, sometimes it required unorthodox policies.

In conservative societies, people tend to fret about too much money being "created", but they typically have no idea whatsoever about how much money there actually is in circulation, how large the effective money supply is. When I ask about the size of the money supply even in front of well-educated audiences, I often get estimates that are wildly off the mark. In contrast, I obtain very precise answers on the rate of inflation. Price stability, not money supply, matters.

Bitcoin nicely illustrates the very essence of the current monetary policy, which relies on elastic money. It is a policy of nominal stabilisation of prices, of the purchasing power of money. In consequence, the impact of shocks does not require tough adjustments through wages and employment.

So, as long as central bankers abide by the principle of purchasing power stabilisation, I'm not afraid that any newly invented fixed money system will spontaneously prevail and become dominant. The fact that current money is fiat, not really in line with my libertarian friends' dreams, is less important than price stability, I would say.

What is really interesting and potentially useful about cryptocurrencies (beyond the mere intellectual stimulus, of course) is distributed ledger technology and the idea of digital money being issued by mainstream central banks themselves. The two are bound together by a common feature: a reduction of the importance of intermediaries.

The distributed ledger technology behind bitcoin brings the attractive notion that, in principle, we don't need any centralised settlement systems, any standardised systems that settle payments. The settlement system can be decentralised, thus potentially saving time.

But let's not forget how the system of payment confirmation works when distributed ledger technology is in play. Bitcoin makes many users confirm that a transaction has taken place. The process is very energy-demanding, akin to actual mining: it resembles all the processes employed in the past when we were dealing with physical money. Using classical commodity money requires physical investment; using bitcoin requires energy investment. So far it seems that distributed ledger technology would consume much more energy than standardised central clearing houses.

That's why we now use non-physical money without any intrinsic value – it is more efficient. Going back to any physical money would be like going back from PCs to typewriters.

Maybe this is one of the reasons I haven't so far heard of any distributed ledger technology being

used in the mainstream banking systems of Europe. Many institutions have been investigating the possibility, studying it, researching it, but that's all. Perhaps you have more information about the practical applications of this potentially promising technology than I do.

The second innovation stimulated to some extent by alternative currencies is digital currency issued by central banks. One can argue that central banks issue digital currencies even now – expanding their balance sheets by creating electronic money.

But this new concept is defined in a narrower sense. In our current system the money creation process is a public-private partnership, with the majority of money being created by commercial banks by means of lending. The banks are essentially creating new deposits, rather than passing on the existing ones.

Therefore, when the central bank wants to increase or decrease monetary balances for the final users of money (households or non-financial companies) it can only incentivise the change indirectly through the actions of credit institutions.

Central bank digital currency would bypass the financial sector and issue money to end-users directly through the balance sheet of the central bank. Similarly to cash, digital money would constitute a liability of the central bank. Instead of being the bank of banks, the central bank would become the “bank of the people” or “for the people”. Every household or company might hold an account at the central bank directly, not via an intermediary.

As we know, the Swedes have gone relatively far with their e-krona project, and the Danes have also proceeded with similar investigations. Here in the United Kingdom, the Old Lady has gone a long way as well. One of the main motivations for this rapid research effort is the swiftly decreasing use of cash. Just some two per cent of the money supply is now created directly by the central bank in Sweden, for instance. But even the avant-garde Swedes consider the e-krona a complement of cash, not a fully-fledged substitute.

The potential advantages of distributed ledger technology and central bank digital currency are the following: more efficient payment systems, direct and more efficient conduct of monetary policy (perhaps even practically enabling helicopter drop of money) and, if implemented on a sufficiently large scale, an end to the need to run costly deposit insurance schemes.

But will central bank digital currency become a complete alternative to cash one day? I'm not sure. Many questions remain: anonymity, susceptibility to cybercrime and IT issues. But above all those, a key issue arises: the problem of competition. Will the central bank change into a direct competitor to commercial banks? Will it serve as a “bank of last resort” for all deposits in bad times? Should it also provide credit to the real economy? Might it become a real monobank, like the ones we saw a few decades ago in former socialist countries? What would the entire money-creation process look like?

These questions are too important to rush around. So far it seems to me like social engineering to talk about abolishing cash fully and issuing digital currency instead. As one of my colleagues once put it: we might have a novel solution, but do we really have a problem?

Thank you very much for your attention.