THE IMPACT OF DIGITIZATION ON THE MONETARY SYSTEM

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Abstract

Digitization has changed the way monetary systems work and this will lead to structural change in the monetary system. In developed economies, the importance of cash is substantially reduced, and the problem arises that cash will be replaced by digitalization with other currencies. It is in this context that digital currencies appeared, which certainly have an effect on the monetary system.

Cryptocurrencies, as it is about them (Bitcoin, Tether or Ripple), have not yet gained a particular relevance in the share of cash transactions. Of course, any system, especially the digitalization of money, is one that is imposed, not with difficulty, but with some requirements to establish a certain mode of action in international transactions.

There is a potential for widespread adaptation of foreign cryptocurrencies that will eventually materialize in the context where precise elements of this system emerge.

In this article the authors aim to highlight the perspective of the digitization of currencies and the effect they will have on the monetary system in operation. In this sense, the aspects that appear in the international specialized literature have been extensively used, using the experience of such coin appearances and the digitalization of money as a result.

Methodologically, intuitive analysis was used, supplemented by the explanation of some concepts that have an effect on the national and international monetary system.

The introduction of digital currencies by banks is one possible answer to trying to describe how the monetary system will evolve.

Keywords: *monetary system, cryptocurrencies, digitization, transactions, developments.*

JEL classification: *E40, E50*

Introduction

In the article *The Impact of Digitization on the Monetary System*, I started by defining the digitalization that has changed the way monetary systems have already worked for many years, but which have recently begun to change their fundamental structure.

It has been shown that developed economies are starting to reduce the importance of cash, and cashless transactions are expected to give way to digital currencies.

Cryptocurrencies have managed to gain ground in terms of share in monetary transactions. This gain is not entirely because there are some systemic deficiencies that lead to extreme volatility, limited capacity and unpredictable transaction costs, limited transparency, which has appeal as a medium of exchange.

Stablecoins, so called stablecoins, are the cryptocurrencies that have entered the scene and which, by linking digital currencies to a set of sub-systems, can lead to the replacement of cash monetary transactions with transactions in these cryptocurrencies.

Regarding the introduction of digital currencies by central banks, some progress has been made, but there are still a number of aspects that need to be perfected, substantiated and put in close correlation.

Some aspects of the properties of digital currencies and the implications for the monetary system are necessary in terms of currency competition. From this point of view, the benefits and risks of digitalization of money for society need to be clarified in order to establish the concept and implications regarding the probability of introducing this system of cryptocurrencies.

For monetary policy, digital money represents a perspective that is not fully clarified at the moment. While digital money and electronic payment systems have become increasingly important elements in the monetary system, they have not fundamentally changed the traditional monetary architecture, a system based on central bank money and commercial bank deposits.

We then addressed aspects related to money. Money is traditionally defined as a financial instrument that performs three functions, namely: facilitating indirect trade in goods and services; deposits of additional resources; a common unit of account for accurately comparing the values of goods and services.

To promote wide acceptance and protect value, money was historically backed by certain commodities, such as gold, which remained the most expensive metal and never devalued in this evolution of monetary systems.

Money can be treated as money used internally and externally. Internally they are created through the quantitative entities of goods and

services, but at the same time, externally they are created through financial-monetary arbitrage, through the exchange of goods and services, etc.

Currency competition has been maintained as a possibility to discipline the model macroeconomic management systems in the sense of ensuring a concentration of values and at the same time to replace currency competition by introducing cryptocurrencies. Switching costs used to be relatively high when an incentive to remain the existing official currency was quite important and aided this evolution.

In the context of this article, a series of references are used that highlight the perspective of the digitization of money, the digitization of currency exchange operations.

Literature review

A number of researchers have been concerned with the impact of digitization on the monetary system. Thus, Anghelache, C and others (2020) analyze the outlook for economic development under the risk of inflation. Brunnermeier et al. (2019) highlight that an independent currency can be defined as payment instruments that are denominated in the same unit of account and where each payment instrument within the currency is mutually convertible. Cavallo (2018) highlight the fact that, together, prices at brick-and-mortar stores are becoming more flexible. Dowd and Greenaway (1993) show that in general currency competition is inhibited by the existence of strong networks of externalities. Fiedler et al. (2018) consider that money, regardless of its concrete form, is the generally accepted means of exchange, the other two functions being of a subordinate nature. Gorodnichenko and Talavera (2017) find that prices in online markets are more flexible than in brick-and-mortar stores. Rogoff (2016) if cash is abolished simultaneously with the emergence of a digital currency people will be forced to accept even negative interest rates on overnight deposits for holding bank reserves.

Methodology, data, results and discussion

Digitization has already changed the way money systems work for many years, but recently it has started to change its structure more fundamentally. Developed economies are rapidly reducing the importance of cash and in some cases are expected to go cashless entirely in the near future.

At the same time, digital currencies emerged. The first wave of cryptocurrencies such as Bitcoin, Ethereum or Ripple failed to gain relevance in terms of their share in monetary transactions. This was due to systemic deficiencies leading to extreme volatility, limited capacity, unpredictable transaction costs and limited transparency, which reduced their ability to perform core functions.

More recently, stablecoins (stable cryptocurrencies) have entered the scene, being specifically designed to deal with the issue of volatility by tying the digital currency to an underlying set of assets. Another important difference from the first generation of cryptocurrencies is that they rely to some extent on third-party institutions and can be issued by a central entity.
In addressing aspects of the impact of digitization on the monetary system, it is useful to distinguish between the architecture and technology of a monetary system. While digital money and electronic payment systems have been the most important components of the monetary system for many years already, they have so far not substantially changed the traditional monetary architecture, a system based on two elements: central bank money and deposits in commercial banks.

New developments such as private money in the form of cryptocurrencies and the prospect of digital currencies issued by government or private entities have the potential to radically change the way the monetary system works.

Money is traditionally defined as a financial instrument that performs three main functions: facilitating indirect trade in goods and services as a generally accepted medium of exchange; serve as a store of value; providing a common unit of account to accurately compare the value of goods and services.

As the most widespread medium (good), money constitutes a category of its own, since it is neither a consumption object (it does not directly satisfy human needs) nor a means of production (the utility of money to enable increasingly productive processes the more complex does not depend on their quantity).

To underpin wide acceptance and protect its value, money has historically been tied to certain commodities such as gold as an anchor, meaning issuers of money have made a legally binding commitment to convert the instrument on demand at anchor.

An anchor is a monetary unit issued by the government in the form of currency. The issuers of money that are used for payments are usually banks, which undertake to convert deposits into an amount equal to government-issued currency. But private non-bank money intended to circulate in a designated, limited economic sphere also abounds, including regional money that has become popular or company debit cards.

There is an important distinction between inside and outside money. Insider money is created by the simultaneous emergence of a claim on the issuing private entity. Outside money, by contrast, is not a claim on anyone, although the issuer may promote the value and acceptance of the money by pledging to maintain a certain exchange rate against another financial

instrument, and backs that pledge up against a collection of assets. Along these lines, traditional electronic payment systems such as credit cards are examples of insider money, while a large number of cryptocurrencies as well as stablecoins such as the proposed Libra represent outsider money.

There is another important distinction between account-based money and token money. Account-based money is tied to a specific person or company, the account holder, who must prove their identity to verify the authenticity of a transaction. In a token system, it is essential to verify element authenticity regardless of the identity of the agents. Cash is the most famous example (so far). of token money, the modern e-money system and Bitcoin cryptocurrencies are also token money. Account-based money is usually tied to granting credits, but token-based money is usually not tied to credits.

An independent currency can be defined as payment instruments that are denominated in the same unit of account and where each payment instrument within the currency is mutually convertible. In other words, the constitutive criterion of belonging to the same currency is the denomination in the same unit of account, regardless of the specific medium of exchange (cash, reserves, bank deposits) and a legally binding fixed exchange rate between the various financial instruments

According to this clarification, many of the recent forms of digital money are independent currencies. These include cryptocurrencies, such as Bitcoin or Ether to name the two largest, but also some stablecoins, including Libra, which would be denominated in their own unit of account, have fluctuating exchange rates against individual official currencies, and retain the ability to to adjust its initial fixed exchange rate to the base basket of considered official currencies.

Currency competition has long been advocated as a way to discipline governments in the management of government-issued currencies. Currency competition in the sense of Hayek, who defined competition as far back as 1976, does not necessarily involve the actual simultaneous existence of several currencies in the same economy, but may even operate through the mere potential of competition, thereby restricting the room for maneuver of monetary policy.

While governments often make competition with privately issued currencies impossible through legal restrictions, some competition remains due to the existence of large internationally traded currencies such as the US dollar or the euro.

In some cases, this competition of relatively stable major currencies has led to a substantial loss of the relevance of the domestic currency in the process of dollarization of an economy.

Historically, competing currencies had to satisfy all three properties of money to a sufficient degree, raising the bar high for a newcomer to sufficiently establish prominence in terms of unit of account and acceptance as a medium of exchange even if credibility as a deposit of value was realized.

Moreover, switching costs (exchange fees) were relatively high, giving an incentive to stick with an existing official currency. In terms of being able to honor all the functions of money from the start, large commercial and social digital networks have changed the potential of disseminating information among a large number of users at a very low cost. These networks are international and allow access to a large number of potential counterparties across national borders. Consequently, such digital ecosystems facilitate the successful introduction of a new currency, and this explains, to some extent, the nervous reaction of some major central banks in response to Libra's announcement, with billions of users on various platforms involved.

As for switching costs between currencies, in the modern digital environment they can become relatively low, with peer-to-peer exchanges within networks without a third party involved and mobile devices enabling on-the-spot execution of currency exchanges. The reduction of exchange costs contributes to a possible separation of the roles of money.

The incentive to use the same currency to perform all the functions of money (medium of exchange, unit of account, and store of value) at the same time is reduced as soon as currency exchange is made easy and cheap. Thus, one currency may be particularly strong in the role of medium of exchange due to its prevalence in large social or commercial networks, so it is used for payments, while another currency may be strong in the role of store of value, so it is used to own money.

While the existence of network effects in the digital economy contributes to the potential separation of money functions and thus promotes currency competition, an opposite effect comes from the role of electronic platforms.

Platforms are digital marketplaces that bring together consumers, merchants and service providers, facilitating the exchange (of goods, services, capital, ideas). If digital, coins are associated with platforms, they will effectively combine platform functionality and data, resulting in a pooling of money along the dividing line between different platforms, which tends to weaken competition between coins.

In the presence of large network externalities produced by transnational social or commercial platforms, new digital currency areas (DCAs) can emerge, when payments and transactions are made by a network-specific digital currency.

A specific DCA currency could be an independent currency representing its own unit of account distinct from already existing currencies such as Libra. Its unit of account is derived from an official basket of currencies, but remains distinct from any of the individual embedded currencies. A specific of the DCA coin is that the coin can continue to use the unit of account of an official currency, but would be limited to transactions and exchanges within the network. Major examples of this type of digital currency area can currently be found in China, with two large networks (Tencent and Ant Financial) entertaining payment systems without interoperability.

Conclusions

The process of digitizing money is ongoing and may even accelerate further. Cash is of relative importance in most economies thus determining the prospect of switching to electronic payment currencies in combination with mobile devices.

There is a prospect that cashless transactions will be replaced by the use of cryptocurrencies in the coming years. Private electronic currency in the system of Big Business and Corporations is in the process of being perfected.

It is found that, at present, cryptocurrencies are used more and more, being able to take the place of sufficiently well-established monetary masses.

It is generally very unclear whether the welfare is capable or the additional sums can cause the banks to ensure the digitization of money so that there are constraints on inflation due to competing currencies.

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