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# A digital Euro to compete with Libra

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## Zusammenfassung

Am 18. Juni 2019 veröffentlichte eine von Facebook angeführte Gruppe von 28 Unternehmen ein Weißbuch, in dem die Einführung einer neuen Krypto-Währung namens Libra vorgeschlagen wurde. Die Initiative könnte der Digitalisierung des Geldes einen großen Schub geben. Die Digitalisierung würde dem Euro auch eine tragfähige langfristige Perspektive geben, die er im Kreditgewährungssystem wahrscheinlich nicht haben wird. Kreditgeld braucht für seine Rückversicherung einen Staat, der für den Euroraum geschaffen nicht werden kann. Digitales Geld hingegen kann ohne staatliche Garantie existieren.

## Abstract

On 18 June 2019 a group of 28 companies led by Facebook published a White Paper proposing the creation of new crypto currency named Libra. The initiative could give the digitalization of money a big boost. Digitalization would also give the euro a viable long term perspective, which it is unlikely to have in the credit money system. Credit money needs a state for its reinsurance that cannot be created for the euro area. Digital money, on the other hand, can exist without a state guarantee.



Europeans use American platform companies to communicate and shop on the Internet. They use the US Dollar for a large part of their international payments. They may in future have to use a cryptocurrency managed mostly by American platform companies with global reach when they want to pay with digital money. For there is hardly a European company suitable to join the Association created by Facebook to issue and manage Libra, the new cryptocurrency capable of attracting a global community of users. Europeans often complain about their dependence on American platform companies and the US dollar. If they do not want to depend on American digital money as well in the future they should think about creating their own crypto money. In the absence of good alternatives, the euro would be the best candidate for digitalization.

### **The challenge<sup>1</sup>**

On 18 June 2019 a group of 28 companies led by Facebook published a White Paper proposing the creation of a new crypto currency named Libra. Their goal is: “A stable currency built on a secure and stable open-source blockchain, backed by a reserve of real assets, and governed by an independent association”. For Facebook, the motivation may have been to augment its social media platform with a payment facility similar to the approach of Chinese platform companies. However, there is more to it: In view of the initial backing by renowned companies from Visa to Vodafone the Libra Project seems to be the most serious initiative for the introduction of a new cryptocurrency since the launch of Bitcoin a decade ago. In fact, its consequences could be much bigger.

Libra is designed to be a “stable coin”, i.e., a crypto currency backed by assets. Its purchasing power is not determined by the supply and demand of the currency itself (like Bitcoin) but derived from the assets backing it. The assets are a basket of existing “fiat” currencies created by central and commercial banks that are internationally convertible, liquid and have a stable purchasing power. Thus, the exchange rate of Libra against any of the basket currencies will move in relation to the movement of this currency against the other basket currencies. And the change in value of any other currency against Libra will equal its move against the currency basket. The Libra money stock grows with purchases of users using conventional money for payment, and members of the Libra Association will act as “buyers of last resort” to ensure that the value of Libra (expressed in a third currency) always matches the value of the underlying assets.

Libra is issued and managed by the members of the “Libra Association”. Membership of initially 28 companies is to increase over time to around

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<sup>1</sup> I am grateful to Björn Holste for many useful suggestions to this section.



100. Facebook played a key role in the creation of the Libra Association, but will in future have the same commitments, privileges, and financial obligations as any other founding member. Facebook created Calibra, a regulated subsidiary, to ensure separation between social and financial data and participate on its behalf in the Libra Association. By bonding with other countries Facebook not only broadens support for its project but also takes these companies out of reach of potential competitors for crypto currencies such as Apple, Amazon or Google.

The Libra blockchain is a new construct built for its users with a tailor-made programming language dubbed "Move". It is a "permissioned blockchain" with members of the Libra Association serving as "nodes" to validate transactions. Consequently, it has the capacity to process large numbers of transactions in a short time as is needed for serving billions of accounts. However, the presently published capacity of 1,000 transactions per second falls short of the 56,000 transactions in the VISA network. Use of Libra for money transfers is free of charge and allows users to transfer under pseudonyms not linked to their real-world identity. However, identity checks will have to be performed at the points of entry.

The architecture of the blockchain enables simple and fast connections to webshops with one line of code, so that every kiosk could be able to accept Libra as a means of payment at short notice. Should Libra establish itself quickly, the "Internet of Things" and "Industry 4.0" would offer the possibility to link flows of goods to machine-to-machine payments. This could be used to document flows of goods (supply chain track and trace) and, in a further step, to evaluate and utilize the information contained therein. If you take the idea a little further and imagine that essential payment and goods flows are documented and processed on the Libra Blockchain, unexpected possibilities for analysis arise. If, for example, a large company pays three days later than usual, financial market players as buyers of the analysis data could draw conclusions about the liquidity of the company in question. From a technical point of view, there are no limits to transparency and, as things stand at present, banking secrecy rules in blockchain currencies still need to be developed.

The reserve pool backing Libra is designed so as to preserve capital and offer a high degree of liquidity. Thus, the association will only invest in short-date debt securities from safe banks and stable governments with low default probability in countries with low inflation, which are all traded in liquid markets that regularly accommodate daily trading volume in the tens or even hundreds of billions. Interest income will go to the members of the Libra Association. Given these requirements, it is not difficult to guess that the currency basket to back Libra will include mostly G7 currencies



(USD, EUR, JPY, GBP, and CAD). With interest rates on short-dated debt in USD, GBP, and CAD still positive, the Association can expect to receive interest income from the start. Assuming the composition of the currency basket to broadly reflect the size of the economies issuing the currencies, the annual interest rate on the reserve would presently amount to around ¾%. Thus, if one billion of users held a Libra Wallet worth USD 1,000 on average, the Association would have an asset base worth USD 1,000 billion and receive interest income of around USD 7.5 billion. It would look like a very big money market fund, which is attractive for its customers not because it pays interest but because it allows non-cash payments without charges.

Libra could become quite attractive for future users for three reasons:

- It offers low cost peer-to-peer money transfers in any amount over any distance.
- It promises a high quality means for the store of value (though without interest).
- It could develop as a unit of account when suppliers on global retail platforms choose to price their wares in Libra.

Considering that Facebook and its affiliates today have already some 2.7 billion users and other Association members such as Visa and Mastercard alone have 1.6 billion users, not all of whom are also Facebook users, the customer potential for Libra is far beyond that of any of the existing currencies.

Not only the experience of the initiators in web technologies (the popular Java Script extension REACT was developed by Facebook) speaks in favour of a fast dissemination. The participation of payment system providers can also be seen as a preemptive move: Instead of being overrun by blockchain-based payment systems, they are taking on the role as operators of validator nodes that commercial banks normally play in the classic processing of payments

Against this, Libra is facing opposition from three groups who all want to preserve the credit money system in its present form to protect their interests. Commercial banks fear that they will lose customers when Libra becomes the preferred means for transactions. Central banks fear that their ability to manage the economy will weaken when a significant part of the outstanding money stock is backed by short-term government credit. And politicians fear that they will become dependent on a big borrower only interested in short-term bills for the funding of government spending. Hence, these groups take an inherently skeptical view of Libra and emphasize potential problems. From their vantage point, Libra could facilitate



money laundering, payments for criminal activities and the abuse of private data, expose users to financial risks, create risks to the financial system by amassing a large stock of financial assets, and undermine the effectiveness of monetary policy.

However, many of these fears are exaggerated. Libra should not be more vulnerable to money laundering and criminal activity than existing cash and bank money. Data protection is a general problem in the digital economy and not limited to digital money. Monetary policy has already lost its effectiveness to a considerable extent, even without Libra, and highly indebted states today already depend on the good will of the financial markets. Assuming that one billion users hold Libra wallets worth USD 6,500 on average, the Libra reserve fund would have USD 6.5 trillion assets under management, no more than Blackrock, the largest fund management company of the world. With only short-term investments in highly liquid assets of very good quality, the Libra Reserve Fund would most likely have lower liquidity and default risks than the average investment fund offered by Blackrock or any other fund management company. Moreover, with USD 6.5 trillion assets, the Libra Reserve Fund would account for about 14% of the broad money stock of G7 countries (Figure 1).

### 1. G7: Broad Monetary Aggregate



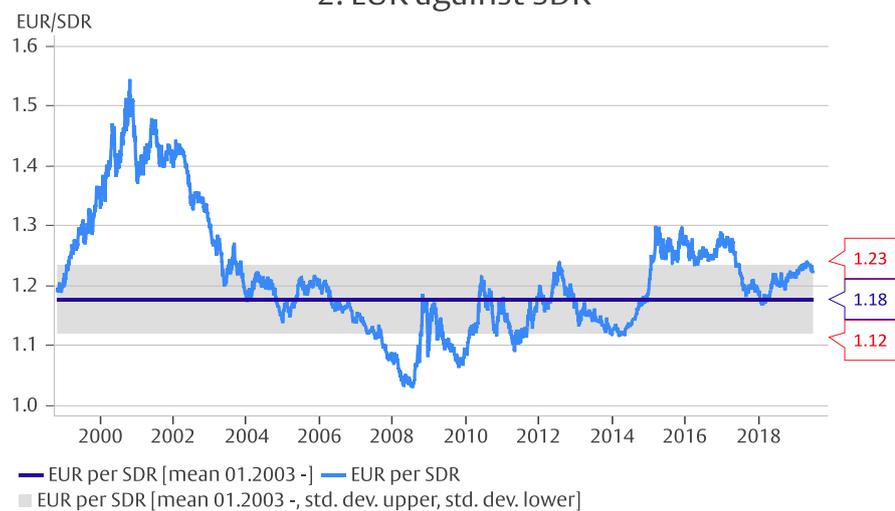
Source: Macrobond

Concerns about the exposure of Libra users to exchange rate risks between Libra and their domestic currencies may also be overdone. Taking the Special Drawing Right constructed by the IMF as a currency basket of a number of key currencies as a proxy for the performance of the Libra basket, we find that exchange rate fluctuations against G7 currencies have been limited. For instance, the euro has traded against the SDR with a standard deviation ranging from EUR 1.23 to EUR 1.12 around a mean rate of EUR 1.18



per SDR since 2003 (Figure 2). Trading ranges may be greater for emerging market or developing country economies, but these currencies have often depreciated against G7 currencies. Hence, for users in these countries Libra may also represent an easily accessible and good store of value.

## 2. EUR against SDR



Source: Macrobond

As there are very few European companies capable to participate in this project, the Libra Association most likely will be dominated by American platform companies with global networks. Hence, Libra could emerge as a US dominated global currency, augmenting the US global financial power already created by the predominance of the US Dollar as an international reserve currency. The perspective of Libra enhancing US global financial power could be the very reason for US regulators not to close the door on Libra.

In the event, however, neither European nor any other members of the groups mentioned above fearing their interests endangered by Libra are likely to be able to prevent digitalization from spreading to the monetary sector. Hence, rather than banning crypto currencies, they would be better off thinking about creating their own digital money as a competitor.

### A European Answer

The euro would probably not only be the only available option, but also the best candidate for being turned into a crypto currency. It seems fundamentally unfit to survive as credit money in the credit money system. Digitalization could give it another chance.

The first step towards a digital euro would be to create a euro bank deposit, which is fully backed with central bank money. The European Central Bank



could acquire the central bank money necessary for covering the deposit by purchasing government bonds. In a second step, the secure euro deposit could be consolidated on the ECB's balance sheet and set up as digital central bank money that can be transferred peer-to-peer using Distributed Ledger (blockchain) technology. Like Libra, the euro would become an "asset token", backed solely by government bonds. Embedded in the token could be a smart contract stipulating the nature of its backing and rules for the creation of new tokens. Unlike Libra, however, it would not be a surrogate of credit money, but pure central bank money. Only the European Central Bank (and not the commercial banks as in the credit money system) would be responsible for issuing it.

The increase in the money supply would take the form of purchases of government bonds. Purchases would have to be decided independently of political influence and from a long-term perspective. For instance, growth of the digital euro money supply could be geared to the expected long-term growth rate of real gross domestic product (the growth potential of the euro area economy). Instead of through bank lending, money supply would be expanded by increasing ECB holdings of government bonds. To avoid money creation for fiscal policy purposes (as proposed by Modern Monetary Theory), governments would be obliged to distribute the money they receive from the bond sales directly to their citizens as a "money dividend". Any government violating this obligation (stipulated in the smart contract embedded in the euro) would automatically no longer receive new money for distribution to its citizens.

Commercial banks would now have to broker their customers' savings deposits in the form of digital euros to investors. They would resemble an investment fund whose assets are protected against first loss by an equity cushion. Savers could choose the bank that suits them according to their preferences for returns and first loss protection. The central bank would no longer manipulate interest rates to control banks' credit money creation. Commercial banks could of course continue to create private debt money through lending, but there would be no state guarantee for conversion at parity into digital euros. Money would no longer be an instrument of economic policy. But only those who have forgotten that the effects of monetary policy on economic growth and inflation are long and unpredictable would worry about that.

### **A New Deal for the Euro**

Digitalization offers the possibility of a "new deal" to reduce the debt of the euro states and safeguard the euro: The fiscally conservative northern countries would agree to the one-off monetization of old debt on the bal-



ance sheet of the ECB for the creation of the secure deposit. In return, the highly indebted southern countries would accept that after the one-off monetization of their old debts, a renewed monetization of national debts would be illegal.

The New Deal could relieve euro area countries of their excessive debts. At the end of 2018, euro area government debt amounted to EUR 9.9 trillion or 85% of GDP. Sight deposits amounted to EUR 7.1 trillion. Thus, in order to back sight deposits with reserve money, the ECB could acquire EUR 7.1 trillion government bonds against reserve money and keep these bonds on its balance sheet. Since the stock of bonds is permanently required as cover for the money stock, repayment would be suspended. Moreover, as interest income from the bonds would be returned to governments anyway, coupons could be reset to zero. With a zero coupon and infinite maturity the bonds would cease to count as government debt. Hence, outstanding debt of euro area governments would fall to EUR 2.8 trillion or 24% of GDP. Highly indebted southern countries would receive a larger amount of debt relief than fiscally conservative northern countries. But as all would gain, the northern countries could afford to be generous.

### **Conclusion**

The digitalization of money would give the euro a viable long term perspective, which it is unlikely to have in the credit money system. Credit money needs a state for its reinsurance that cannot be created for the euro area. Digital money, on the other hand, can exist without a state guarantee. The stability of the digital euro's purchasing power would come about in competition with Libra and other domestic and foreign digital and credit currencies, rather than being promised in unenforceable European contracts. Central bankers are conservative by nature and (like politicians and commercial bankers) have vested interests in the continued existence of the credit money system. They could prohibit the digitalization of money in order to preserve the credit money system despite its obvious shortcomings. But do we really want to build an analog money museum for the sake of a few interest groups in the new digital world?



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