Yves Mersch: Virtual currencies ante portas

Speech by Mr Yves Mersch, Member of the Executive Board of the European Central Bank, at the 39th meeting of the Governor's Club of The Central Asia, Black Sea Region and Balkan Countries, Bodrum, Turkey, 14 May 2018.

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New innovations based on distributed ledger technology (DLT) and blockchain have brought about wide-spread euphoria. Their use to create “cryptocurrencies” or “virtual currencies” (VCs) – to denote their lack of legal recognition – is often touted as something that could fundamentally change the financial sector.

The spectacular rise in the market valuation of VCs over the past year suggests that many people shared this belief. In the course of 2017 the global VC pool both deepened, from USD 30 billion to USD 400 billion, and widened, with the proliferation of “initial coin offerings” or “ICOs” – virtual fundraising facilities for start-up investors.[1]

But in my view, the subsequent market plunge rather points to a fading fad. From December to February the price of bitcoin, the top dog among VCs, fell from almost USD 20,000 to below USD 7,000.

Don’t get me wrong: I am an ardent believer in progress through innovation. Technological progress can provide us with significant efficiency gains and increases in general welfare. Perhaps DLT and blockchain can do just that[2]

But I am very sceptical towards the use of these technologies to create currency. Although they combine decentralised payments and label them as currency, VCs are still not legitimised by any authority. Moreover, VCs rely on financial intermediation via exchanges and wallet providers to re-enter the real economy.

Any fiat money requires trust to gain and maintain the acceptance of those who use it. Indeed, history has shown that confidence in public money is best provided by a trusted issuing authority, that is, an independent central bank issuing safe and stable liabilities that people can access and hold. Trust in a central bank, in turn, is created and sustained via legal safeguards, a clear price stability mandate and a sufficient degree of democratic accountability. In contrast, nobody is liable for VCs, nor are they backed by any trustworthy authority. Under these circumstances, it may well be that VCs will fail, as so many other earlier forms of money did.

There are, at present, more than 1,500 VCs in circulation, with dozens of new schemes being launched monthly. The total value outstanding has fluctuated sharply, largely because of speculative activity, and most have failed to attract users. Yet authorities need to be aware of the potential risks they pose for the economy.

Are VCs the latest incarnation of money? The answer for now, and indeed for the foreseeable future, is no.

What is money?

Economists identify money as a verifiable asset that serves as a medium of exchange, a unit of account and a store of value. How well do VCs carry out those functions?

First, VCs’ performance as a medium of exchange is weak – to say the least. Some have attained patchy acceptance – the largest at present, bitcoin, is accepted by some retail outlets. But on a global scale these outlets remain small in number, and hardly any actual transactions take place.

On a daily basis, there are around 200,000 bitcoin transactions globally, compared with 330 million retail payments in the euro area.

Bitcoin is far inferior to existing payment options. Transactions generally require confirmation from six miners, which can take an hour, or potentially much longer due to network congestion.

Bitcoin payments are also expensive: the cost varies over time, but reached €25 in December 2017. And even if recent claims put the price at between €1 and €30 and the processing time at under ten minutes, this compares poorly to 0.2 euro cents and a maximum of ten seconds for transactions on the forthcoming TARGET Instant Payment Settlement (TIPS) service.

The **second** function of money is acting as a unit of account, without which buyers and sellers would not be able to measure the value of a particular good or service.

VCs fail this test – none of them are generally accepted as a unit of account. In part this is due to the lack of widespread recognition. VCs are not legal tender and are not backed by a central bank. Moreover, their prices are too volatile to establish a reference value.

But the lack of acceptance as a unit of account is also down to the **third** function of money – being a store of value.

VCs exhibit wild fluctuations in value. For instance, the average volatility of the top ten VCs by market capitalisation was more than 25 times higher than that of the US equities market. Such fluctuations mean that businesses setting prices in VCs could find themselves with a large and detrimental gap between their actual price and their optimal price.

Similarly, households cannot rely on VCs as a stable store of value to optimise their spending over time by saving.

VCs have neither intrinsic value, such as the commodity content of gold coins, nor extrinsic value, such as the value assigned to traditional fiat currencies by the trusted public issuing authority.

It is very clear that VCs currently do not fulfil the three basic functions of money: they are inefficient media of exchange, poor stores of value and are not used as units of account.

It is these failures that make the label “currency” a misnomer.

Potential impact of virtual currencies

Yet even if VCs are not money, public authorities should still be aware of the potential risks they pose for financial stability – although currently these markets are too small to be of systemic importance.

VCs are inherently risky compared to conventional financial assets. They are excessively volatile and illiquid due to the fragmented nature of unregulated exchanges and their high ownership concentration: 96% of current bitcoin holdings are estimated to be held by 2.5% of users.

This facilitates price manipulation and other misconduct and is further compounded by operational and technical weaknesses of the underlying technology[3]

Yet, VCs do not appear to pose material financial stability risks. One reason is that they are small compared to the financial system as a whole. The market capitalisation of VCs was USD 432 billion in early 2018, about 1.5% of the market capitalisation of the S&P500.

But the significant rise in the market valuation of VCs we saw prior to December 2017 calls for caution. If, in the future, such a boom led to a large enough VC market, it could become a factor

that affects financial stability in the event of a crash. Such risks could intensify via several channels.

Wealth effects could disrupt financial stability not only through consumer spending but also through collateral valuation. If VCs were indeed used as collateral for loans, a fall in the value of such collateral could lead to margin calls and increased defaults, with knock-on effects on borrowing and economic activity.

The effects of a crash could be further magnified if VC investors were highly leveraged[4]

Not only would investors lack equity to absorb losses, but losses would also spread to creditors. Moreover, the use of derivative contracts could spread the losses more broadly across the economy by allowing other market participants to hold leveraged positions against VCs.

A crash could affect the stability of the wider financial system if big banks were to hold huge unhedged exposures to VCs. Similarly, the widespread use of VCs for payment or settlement could affect economic transactions on a large scale and disrupt the financial system.

Amid such potential risks, resolute ring-fencing measures may be needed to safeguard the integrity of financial sector services, protect investors and consumers, and prevent negative spill-overs to the real economy.

The four broad areas that require particular attention are: (i) VCs themselves; (ii) the facilitators – VC exchanges, wallet-providers and brokers; (iii) financial market infrastructures (FMIs); and (iv) the banking sector.

Regulating virtual currencies

VCs cannot be directly regulated or overseen in the absence of a centralised governance and legal framework. In fact, most VCs are “mined” peripherally by a computer programme explicitly to prevent any one legal entity being in control. Several countries have banned VCs outright or ring-fenced them from the financial sector, notably China, where VCs were very active and computing capacity was concentrated.

In most countries regulatory action has focused on issuing warnings. In the United States for instance, the Securities and Exchange Commission (SEC) outlined more than 30 questions that had to be answered before it would give the green light to mutual funds and exchange-traded funds (ETFs) that invest in VCs.[5]

Some countries have adopted “regulatory sandboxes”, granting fintechs active in VCs temporary, conditional exceptions to regulatory requirements. Although such sandboxes may be useful to try and test regulation, they clearly risk incentivising regulatory arbitrage. We ultimately need global answers in the absence of a defined jurisdiction for VC issuance.

At their meeting this year in Buenos Aires, the G20 finance ministers and central bank governors acknowledged that technological innovation, including DLT and blockchain, had the potential to improve the efficiency and inclusiveness of the financial system. They warned, however, of the risks stemming from VCs regarding consumer and investor protection, market integrity, tax evasion, money laundering and terrorist financing, not least because VCs lack the key attributes of sovereign currencies. Ministers and governors therefore committed to extending global standards for combating money laundering and terrorist financing to VCs, and called on international standard-setters to monitor VCs closely – and assess multilateral responses where needed.[6]

Restraining the facilitators

Let me turn to the facilitators of VCs. We need to hold VC exchanges to the same rigorous standards as the rest of the financial system.

For this purpose, the 5th Anti-Money Laundering Directive will bring VC exchanges and wallet-providers within the scope of anti-money laundering (AML) and combating the financing of terrorism (CFT).

But we need a broader perspective on regulation. Possible regulatory action to extend licensing and supervision rules to VC facilitators could be explored.[7]

Protecting financial market infrastructures

Third, I would like to cover financial market infrastructure services.

One of the key questions is whether VCs could become a settlement asset in payment and settlement services or be used in the clearing domain. Existing standards for FMIs refer to the usage of "a settlement asset with little or no credit and liquidity risk"[8]

While this appears to exclude settlement involving VCs, such standards do not systematically apply to all FMIs.

The situation is similar in the field of securities settlement. Could VCs be used as an asset for settling securities transactions or constitute a security per se? The answer hinges on whether they could be legally characterised as a "financial instrument" under the applicable regulation. And this depends on whether crypto-assets allow the identification of an issuer who can be held liable.

The use of VCs at central counterparties (CCPs) should also be monitored. Here too, standards require CCPs to accept highly liquid collateral with minimal credit and market risk. While it is doubtful that a VC would meet such a requirement, clear guidelines ex ante would be helpful.

In my view, there's a need to examine whether any VC activity carried out by FMIs should have to be ring-fenced. The enforcement of segregated accounts and liabilities could be discussed. FMIs play an important role in financial markets, and any liquidity support offered by central banks should be to mitigate shocks emanating from the real economy, not from gambling in risky assets.

Regulating banks

Finally, we need to look at the banking sector. Due to the high volatility of VCs it might seem appropriate to require any VC trading to be backed by adequate levels of capital, and segregated from other trading and investment activities.

Given the risks posed by leverage, banks should not accept VCs as collateral, or should only accept them with haircuts that appropriately reflect past volatility and liquidity, as well as market and operational risks. Likewise, limits on leverage could be examined.

Conclusion

Let me conclude.

Do VCs herald a new world of money? No, virtual currencies are a misnomer in the first place. They are not money, nor will they become money in the foreseeable future. They lack the official recognition and backing of a public authority. Their market share is still small, the amount of money at risk in financial market infrastructures is insignificant and their ties to the real economy are still limited.

But this can change. Authorities should therefore pay close attention to mitigating the potential risks that could stem from a growing VC market. We have to be mindful not to have the complex and interlinked financial system contaminated by immature technologies or shallow business models. Interfaces and gatekeepers require particular scrutiny.

Likewise, we should not succumb to the temptation to sacrifice the achievement of a level playing field for innovative advances that are aimed at regulatory arbitrage.

But I don't want to sound too negative. It is not unknown for new innovations to bring about euphoria, which in turn fuels bubbles that eventually burst. Still, just because the initial euphoria subsequently fades, does not mean that the innovation itself is without virtue.

These virtual currencies are clearly not suitable for use as money, but the underlying technology may, in time, become useful and widespread. And although we at the ECB don't intend to introduce a central bank digital currency for the foreseeable future, we are actively experimenting with the technologies. We will be able to cater for changing needs in trusted and stable central bank liabilities that are accessible to the citizens, if and when this becomes necessary.

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1 See The Economist, 28 April 2018, p. 65.

2 See the report of the Committee on Payments and Market Infrastructures entitled "Distributed ledger technology in payment, clearing and settlement: an analytical framework", February 2017.

3 In January 2018 Tokyo-based VC exchange Coincheck was hacked and €430 million of virtual currency was stolen.

4 A survey found that 20% of VC asset owners used debt to finance purchases. See Kharif, O. (2018), "Bitcoin on credit? For 20 percent of owners, that's yes", Bloomberg, 7 February 2018.

5 The SEC's concerns relate, in particular, to how mutual funds or ETFs propose to store, safeguard, and price VCs and how they would address elevated risks of fraud and manipulation.

6 "(…) We acknowledge that technological innovation, including that underlying crypto-assets, has the potential to improve the efficiency and inclusiveness of the financial system and the economy more broadly. Crypto-assets do, however, raise issues with respect to consumer and investor protection, market integrity, tax evasion, money laundering and terrorist financing. Crypto-assets lack the key attributes of sovereign currencies. At some point they could have financial stability implications. (…)", see the G20 communiqué of finance ministers and central bank governors.

7 For instance by amending or broadening existing frameworks, such as the revised Payment Services Directive (PSD2): Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC (OJ L 337, 23.12.2015, p. 35).

8 Principle 9 of the CPMI/IOSCO Principles on Financial Market Infrastructures (PFMIs).