

## The dangers linked to the emergence of virtual currencies: the example of bitcoins

*The rapid expansion of the Internet has led to a proliferation of so-called virtual communities. This has in turn triggered the rise of “virtual currencies”, where an online community develops its own electronic money or means of payment in order to exchange goods and services in a virtual environment. One of the most widely known forms of virtual currency is the “bitcoin”.*

*Recently, with the announcement by some real-world merchants that they will accept virtual currencies, and the emergence of exchange platforms to convert them into “real” money, it has become clear that users need to fully be informed of the risks associated with this unregulated form of payment.*

*This focus explains how bitcoin functions, and aims to highlight some of the dangers for users of virtual currencies and the challenges for creating a regulatory framework.*

### ■ Bitcoin: an unregulated currency offering no guarantees

Bitcoin is an unregulated virtual currency, designed as an alternative to official currencies but with no guarantee of reimbursement

Created in 2009 by Satoshi Nakamoto (which could be a pseudonym either for a single person or for a team of programmers), bitcoins are a virtual unit of account stored on an electronic device, which allow a community of users to exchange goods and services without using an official currency (i.e. a currency with legal tender status).

Bitcoin was designed to carry out the three traditional functions of money: (i) it represents a unit of account, i.e. a standard unit of measurement of the market value of goods, services and assets; (ii) it facilitates commercial exchanges, and (iii) it allows users to store value for future use.

However, it cannot be classified as legal tender as any merchant can refuse it as payment without being in breach of Article R642-3 of the French Criminal Code (which outlaws the refusal of euro-denominated coins or banknotes having the status of legal tender). Consequently, the circulation of bitcoins would not infringe the central banks' monopoly in the issuance of money.

In addition, bitcoins cannot be regarded as a means of payment, or even as electronic money,<sup>1</sup> in the sense defined in the French Monetary and Financial Code, as they are not issued on the receipt of funds.<sup>2</sup> **Moreover, unlike electronic money, there is no legal obligation to reimburse bitcoin owners at face value and at any time.**

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<sup>1</sup> Article L315-1 of the French Monetary and Financial Code, enacting Article 2.2 of Directive 2009/110/EC, defines electronic money as electronically, including magnetically, stored monetary value representing a claim on the issuer, which is issued on receipt of funds for the purpose of making payment transactions, as defined in point 5 of Article 4 of Directive 2007/64/EC, and which is accepted by a natural or legal person other than the electronic money issuer.

<sup>2</sup> Article 4.15 of Directive 2007/64/EC of 13 November 2007 on payment services (known as the “PSD”) defines funds as “banknotes and coins, scriptural money and electronic money as defined in Article 1(3)(b) of Directive 2000/46/EC.”

Despite the fact that they have no legal status, bitcoins are now accepted in France by a number of online and traditional merchants, as well as by certain internet donation sites and by projects such as Wikileaks.<sup>3</sup>

## An inherently speculative concept

Bitcoins are generated by an online community of operators, known as “miners”, using open-source software which they download onto their computers. This software generates bitcoin units of account by solving complex algorithms, and the miners are then allocated a set number of newly created coins as a reward for taking part in the system.

The main features of bitcoin issuance are as follows:

- ✓ the number of bitcoins that can be created is limited to 21 million, and this threshold is expected to be reached in 2140;
- ✓ the rate of bitcoin creation is controlled and fluctuates to take into account the number of miners in operation and the increase in the processing capacity of their computers. In 2009, the rate of creation was 50 bitcoins every ten minutes but since January 2013 this has stood at 25 bitcoins every ten minutes.

**By limiting the maximum number of bitcoins that can be created and varying the rate at which they are produced, the designers have in effect engineered an artificial shortage of the currency, making it highly speculative.**

Once they have been created, bitcoins are stored in digital “wallets” on a home computer, tablet computer or smartphone. They can then be transferred completely anonymously via Internet between members of the virtual community. All transfers are made outside the traditional payment circuit.

**A number of internet platforms now offer to buy/sell bitcoins in exchange for official currencies, but with no guarantee of price or liquidity**

Bitcoins have attracted interest from a growing number of internet users, drawn by the guarantee of anonymity – no personal details are required to carry out exchanges – and the promise of low transaction fees.

As a result, a number of internet platforms have been set up to allow users to buy and sell bitcoins in exchange for official currencies (euro, dollar, etc.), allowing them to acquire virtual money without actually taking part in the creation process. Bitcoin can therefore be classified as a bidirectional flow virtual currency scheme,<sup>4</sup> as described in the European Central Bank’s report of October 2012 on virtual currencies.<sup>5</sup>

**The value of the bitcoin on these platforms is not guaranteed and is determined solely on the basis of supply and demand.** Due to the lack of price and liquidity guarantees, and the fact that bitcoin has no legal status or regulatory framework, the currency poses a number of risks that need to be analysed more closely.

<sup>3</sup> Cf. the website [www.bitcoin.fr](http://www.bitcoin.fr) for the list of merchants who accept bitcoin payments.

<sup>4</sup> Like any other convertible currency, virtual currencies have two exchange rates (buy/sell) and can be used to purchase virtual or real goods and services.

<sup>5</sup> The report can be viewed at: <http://www.ecb.int/pub/pdf/other/virtualcurrencyschemes201210en.pdf>

## ■ The dangers linked to the rise of bitcoins

The anonymity of the bitcoin scheme means it can be used to circumvent anti-money laundering and counter-terrorist financing rules (AML-CTF)

Owing to the high degree of anonymity of bitcoin transfers, the main risk associated with the currency is its potential for use in criminal activities (i.e. to sell illegal goods and services via Internet) or for money laundering and terrorist financing purposes.

This issue was underlined by the French Finance Ministry's financial intelligence unit, Tracfin,<sup>6</sup> in its 2011 activity report, which singled out virtual currencies such as bitcoin as posing a specific risk in terms of AML-CTF.

At international level, the Financial Action Task Force (FATF) highlighted the AML-CTF risks associated with exchangeable and redeemable virtual currencies in its guidelines on new electronic means of payment, which were adopted and published after its meeting of 19-21 June 2013.<sup>7</sup>

Moreover, in 2013, the FBI began legal proceedings – leading to several arrests – against the providers of a number of exchange platforms suspected of facilitating money laundering activities and tax fraud.<sup>8</sup> As a result of this action, on 2 October 2013, U.S. legal authorities shut down the website Silk Road – an anonymous site for purchasing drugs – which only accepted bitcoins as payment and where a substantial proportion of the bitcoins in circulation were exchanged.

**Although bitcoins are not currently a credible investment vehicle and therefore do not pose a significant threat to financial stability, they do constitute a financial risk for those that hold them**

Due to the limited and predetermined growth in the number of bitcoins in circulation, the currency can be used as a vehicle for speculative investment. In addition, some investors have used it as a safe-haven asset, for example during the Cypriot crisis.

However, there are currently four factors limiting its use as a credible investment vehicle:

- ✓ the value of the bitcoin is not linked to any real activity or to the value of an underlying asset;
- ✓ the currency is highly volatile. Its value is primarily determined by the level of user confidence in the security of the system, and its correlation to the majority of traditional assets is low (see box);<sup>9</sup>
- ✓ transactions are slow and there are currently no investment vehicles denominated in bitcoins (however, a few limited initiatives have been launched, offering investment products indexed to the price of bitcoins - for example the Winklevoss Bitcoin Trust investment fund which has filed a registration with the U.S. Securities and Exchange Commission);<sup>10</sup>
- ✓ its status as an unregulated currency poses legal risks.

6 Cf. page 21 and following of the report available at: [http://www.economie.gouv.fr/files/RAVTracfin\\_09082012.pdf](http://www.economie.gouv.fr/files/RAVTracfin_09082012.pdf)

7 These guidelines can be viewed at <http://www.fatf-gafi.org/media/fatf/documents/recommendations/Guidance-RBA-NPPS.pdf>

8 Cf. Financial Times article of 10 June 2013 "US fraud crackdown on virtual currencies".

9 Source: Briere (M.), Oosterlinck (K.) and Szafarz (A.), "Virtual currency, tangible return: portfolio diversification with bitcoins".

10 The registration statement for WBT can be viewed at <http://www.sec.gov/Archives/edgar/data/1579346/000119312513279830/d562329ds1.htm>

### The volatility of the bitcoin

The value of the bitcoin – generally quoted in dollars – has soared since it was created, fuelled by growing publicity and by its appeal as an alternative investment vehicle.

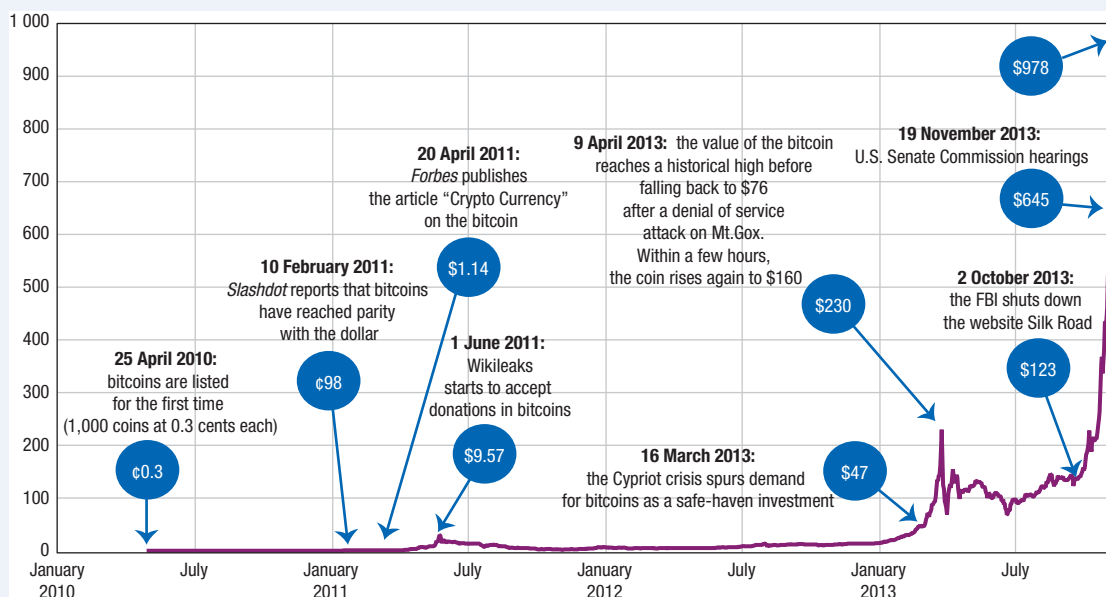
In February 2011, the bitcoin was worth less than one dollar, but following the publication of an article on the currency in Forbes its value rose sharply, reaching 9 dollars by end-May 2011. Similarly, after an article appeared on the New York blog Gawker on 1 June 2011 describing the currency's popularity with online drug traffickers, its value quickly tripled to 27 dollars.

More recently, the financial crisis in Cyprus triggered renewed interest in the bitcoin, and on 9 April 2013 it hit a high of 230 dollars. It subsequently dropped again after the main bitcoin exchange, Mt.Gox, was hit by a denial of service cyber-attack.

In July 2013, the currency began to rise steadily, falling only temporarily after 2 October 2013 when the FBI shut down the e-commerce platform Silk Road, used to buy and sell drugs and which only accepted bitcoins as a means of payment. Boosted by the uncertainty over the U.S. debt-ceiling debate, however, the bitcoin soon recovered, rising above 150 dollars on 13 October 2013. This trend then continued throughout November and by the end of the month the value of a single bitcoin had exceeded 1,000 dollars. The sharp rise over the autumn can be attributed in part to a misinterpretation of a statement by the Chairman of the Federal Reserve, Ben Bernanke, at the U.S. Senate Committee hearings on virtual currencies, and to the news that China's leading search engine had decided to accept bitcoins for online payments.

### Change in the bitcoin exchange rate

(in dollars)



Source: Banque de France, bitcoincharts.com

While the strong volatility of the bitcoin may offer advantages for both professional and private speculators, investors nonetheless need to be warned of the risks associated with the currency:

- ✓ there is no authority in place to monitor the security of the digital wallets set up to store bitcoins. As a result, bitcoin owners have no recourse in the event of a theft by computer hackers;
- ✓ the convertibility of bitcoins into official currencies, which is vital if investors are to be able to lock in profits from their speculative activities, is not guaranteed by a central entity. Investors can only recoup their funds in the form of real money if other users are willing to buy bitcoins. As a result, the system could collapse at any moment if investors rush to unwind their positions but find that their portfolios have become illiquid.

**In the absence of a guarantee of security, convertibility or value, bitcoins offer little or no benefit for economic agents, aside from the marketing and publicity aspects, while at the same time exposing them to substantial risks**

Any merchant accepting bitcoins to a significant extent exposes itself to a series of major risks: (i) a liquidity risk, linked to the lack of depth in the bitcoin currency market, (ii) a financial risk linked to the volatility of the bitcoin, (iii) an operational risk linked to the lack of security surrounding the wallets used to store the bitcoin units of account and the lack of a financial guarantee in the event of fraud.

This also applies to individual consumers. Moreover, in the case of consumers, using virtual currencies means they no longer benefit from any of the guarantees usually associated with means of payment covered by the Payment Services Directive (such as a guarantee of reimbursement in the event of an unauthorised payment).

As a result of these significant risks, the potential for virtual currencies to become an alternative to official currencies and means of payment is extremely limited.

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## ■ Limiting the risks linked to bitcoins

As virtual currencies do not have legal tender status and are not a means of payment covered by the European Payment Services Directive, which guarantees reimbursement in the event of fraud or an unauthorised transaction, they are not directly supervised and overseen by any competent authority. Given the risks associated with their use, however, and the possibility that they could facilitate illegal activities, their development is being closely monitored by authorities.

It is not currently possible to regulate the issuance of virtual currencies, as they are specifically designed to circumvent all forms of public control and do not belong to any of the instrument categories covered by current banking and financial regulations. However, services to convert or exchange them into legal tender do fall within the scope of existing regulations, and should notably come under direct supervision under anti-money laundering and counter-terrorist financing rules.

Indeed, given that the size of the network for virtual money, and for bitcoins in particular, is still limited, there is little benefit in using these currencies for money laundering or terrorist financing activities unless they can ultimately be converted into legal tender.

Consequently, online exchange platforms such as Bitcoin-Central, which receive, transfer and provide account-holding services for funds in real money – should be regarded as payment service providers requiring a specific licence to operate.

In France, the Commercial Court of Créteil set a legal precedent on 6 December 2011, when it ruled that virtual currency exchange services should be regarded as payment service providers and therefore need to be authorised as a payment institution. This decision could be backed up with the addition of a specific provision to the Payment Service Directive, which is currently being revised.

In the United States, the Financial Crimes Enforcement Network (FinCEN), a bureau of the Treasury department, adopted a similar approach in its guidance for regulating virtual currencies, published on 18 March 2013.<sup>11</sup> Although the document proposes no legal classification for this type of product, it does state that decentralised exchange platforms for virtual currencies such as bitcoin carry out fund transfer activities and as such require specific authorisation. Following the publication of these recommendations, a warrant was issued against Mt.Gox, and the exchange platform was obliged to apply for a Money Service Business licence allowing it to carry out fund transfer activities on U.S. territory, supervised under AML-CFT rules. Mt.Gox was granted this licence on 13 August 2013.

In order to obtain a licence, exchange platforms are required to follow all rules relating to the prevention of money-laundering and of the financing of terrorism. In France, under Article L522-6 of the French Monetary and Financial Code, the granting of licences and supervision of platforms is the responsibility of the *Autorité de contrôle prudentiel et de résolution* (ACPR, the French supervisory authority).

Moreover, the Banque de France is charged with monitoring the operational security of all licensed platforms (Article L141-4 of the French Monetary and Financial Code), to limit the risk of fraud in the buying and selling of bitcoins.

Despite this supervisory framework, however, it is not currently possible to regulate websites accepting bitcoins as payment and thus prevent the currency from being used in the sale of illegal goods and services. Police intervention is required in this case to put a stop to these illegal activities.

<sup>11</sup> To view these recommendations, go to: [http://fincen.gov/statutes\\_regs/guidance/html/FIN-2013-G001.html](http://fincen.gov/statutes_regs/guidance/html/FIN-2013-G001.html)