

# Economic Watch

## Global

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Economic Analysis

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## Bitcoin: A Chapter in Digital Currency Adoption

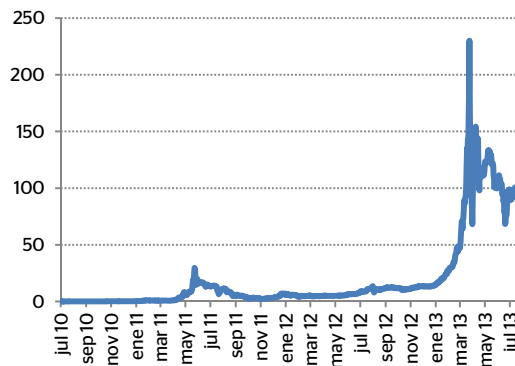
- Decentralization and peer-to-peer model underlie Bitcoin’s popularity
- Anonymity and lack of transparency will limit its success
- Technological progress boosts proliferation of alternative models
- Innovative and tech-savvy banks will be leaders in the digital currency world

### What is Bitcoin?

Bitcoin is a digital currency that is traded from person-to-person over the internet, not backed by a government, private company or commodity. To exchange bitcoins users download special software. According to MIT Technology Review the software “...connects over the Internet to the decentralized network of all Bitcoin users and also generates a pair of unique, mathematically linked keys, which you’ll need to exchange bitcoins with any other client. One key is private and kept hidden on your computer. The other is public and a version of it dubbed a bitcoin address is given to other people so they can send you bitcoins.” Transactions are validated and published by other network users to confirm that there is no double spending or fraudulent activity. These users are compensated with bitcoins and the reward diminishes over time as issuance approaches a predefined limit of 21 million bitcoins.

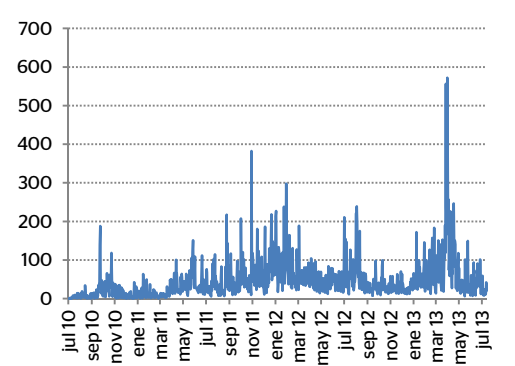
Bitcoin is one of many attempts dating back to the 1980s to develop a decentralized payment network. In the beginning, web and software developers adopted Bitcoin as a mechanism to trade services among themselves. Programmers would accept bitcoins to help in the writing of software, knowing that those bitcoins would be later accepted when needing similar assistance. But bitcoins have become increasingly popular. There are 11.5 million bitcoins in circulation with a market capitalization that has fluctuated between \$150m and \$2.5bn in the past six months. Moreover, the number of transactions increased from an average of 100 per day in 2009 to almost 43,000 at the end of July 2013. Exchanges have been created for buying and selling bitcoins using traditional bank accounts.

Chart 1  
**Bitcoin / USD Exchange Rate**



Source: BBVA Research and Mt. Gox

Chart 2  
**Bitcoin Trading Volume, Thousands**



Source: BBVA Research and Mt. Gox

## Bitcoin in Today's Financial System

In its simplest form a traditional currency serves three purposes:

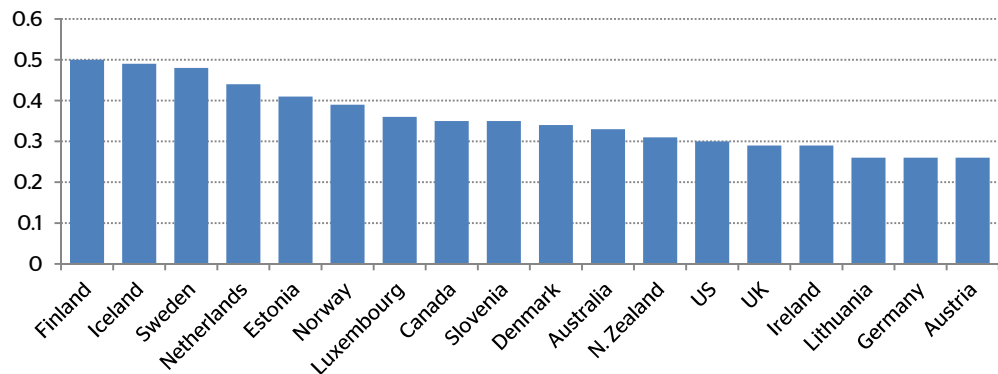
**Medium of exchange:** As a means to bypass the problem of “coincidence of wants” which exists in a barter economy. For a currency to be effective as a medium of exchange it needs to be liquid and widely accepted.

**Store of value:** As a “risk-less” medium to store wealth, the value of a currency needs to be predictable.

**Unit of account:** As a benchmark to measure the value of all other goods and services transacted in an economy.

Bitcoin serves a role as a peer-to-peer network and a digital currency. However, it is not a traditional currency in the strictest sense as explained above. As a medium of exchange, bitcoin satisfies the condition of coincidence of wants; however, it lacks liquidity because it has not been widely accepted. Its high-volatility makes it hard to predict and thus can be a risky instrument to store value. In fact, the sharp buying and selling due to the Cyprus bail-in showed bitcoin's vulnerability to speculation and highlights how unpredictable its value can be. Finally, bitcoin's role as a unit of account is still confined to a small group of businesses and individuals.

Chart 3  
**Bitcoin Penetration, Downloads per Capita, %**



Source: BBVA Research and Genesis Block

Because of its shortfalls as a currency, bitcoin's insertion in the financial system has not been smooth. By construction, Bitcoin is unregulated and derives its value from decentralization and anonymity. The supply of bitcoins cannot be controlled, regulated or supervised by any public authority and although businesses using bitcoins can be regulated, bitcoin transactions and mining cannot. Anonymity makes it difficult to manage credit, counterparty, liquidity, market, operational and legal risks. Therefore, bitcoins, in their current format, are not compatible with banks and regulators' quest for transparency and accountability.

Not surprisingly, the involvement of banks in the Bitcoin environment has been marginal and confined to servicing businesses that operate with bitcoins. In most countries, banks are required to know their customers and comply with anti-money laundering regulations, which are difficult to comply with in the Bitcoin network. For example, the U.S. Department of Homeland Security seized Mt. Gox's bank account at Wells Fargo, alleging violations of anti-money laundering regulations. Likewise, Barclays and Royal Bank of Canada have frozen or shut down bank accounts tied to Bitcoin businesses.

Ultimately, lack of government support and vulnerability to money laundry make it very difficult for bitcoin to become a true competitor of benchmark currencies. Without the backing of governments

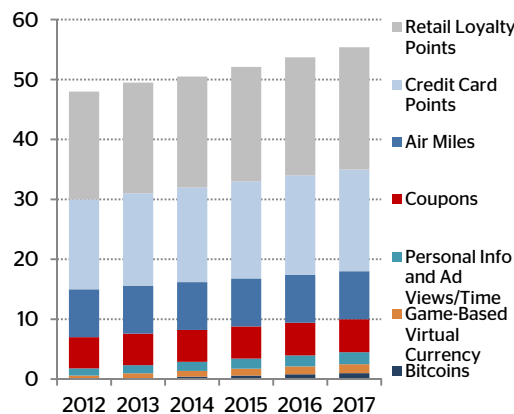
and monetary authorities, bitcoin's role in the global financial system will be limited to a niche currency or a digital commodity.

## The Digital Currency Is Here to Stay

Despite its shortfalls to become a widely accepted currency, bitcoin's limited supply and anonymity is an attractive option for supporters of a decentralized monetary policy system and people that have lost trust in the financial system after the recent global crisis. In addition, it could be attractive for individuals looking to hedge against unstable local currencies. Therefore focusing solely on Bitcoin's success or failure is misleading. Ultimately, Bitcoin's tale is just a chapter in a much broader and complex story: the evolution of the digital currency.

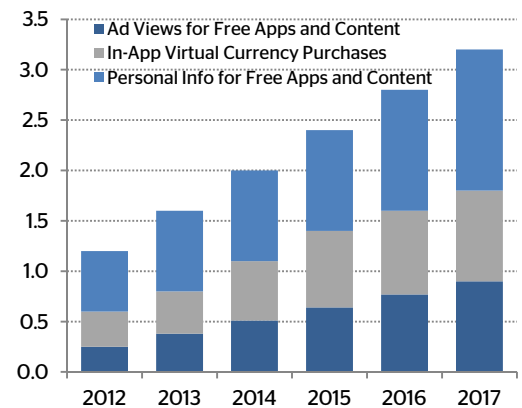
Digital currencies are part of a broader group of virtual currencies that include credit card points, air miles, loyalty points and coupons. With the advent of the Internet, mobile devices and detailed consumer information, companies are increasingly using digital currencies as a marketing tool. As a result, there has been a sharp increase in the usage of digital currencies, particularly for app-based coins and tokens, mobile coupons, and personal data exchanged for digital content. As these trends evolve, digital currencies will become more popular and compete with traditional currencies.

Chart 4  
Virtual Currency Growth US\$bn



Source: Yankee Group

Chart 5  
App-Based Virtual Currencies Growth, US\$bn



Source: Yankee Group

Fiat money displaced commodity currencies, which had previously replaced barter. Nowadays, digital currencies are challenging conventional money just like plastic cards are favored over bills and coins. Soon electronic wallets may be preferred over debit cards. This reflects lower transaction costs and greater convenience. Digital currencies are easier to handle than cash, checks and plastic cards, and can be carried in mobile devices such as smartphones and handheld personal computers. In addition, worldwide acceptance of a digital currency would stimulate international transactions and increase the supply of financial services to a greater amount of people.

From an institutional perspective, even though today's money is increasingly moving in an electronic environment, it is still managed by the banking industry. However, in its purest form, digital peer-to-peer currencies eliminate the need of banking intermediation and sovereign guarantees. A decentralized digital currency challenges the entire monetary and banking system. For example, Ripple, created by a private company, was designed to serve a dual function as a currency and a payment system, allowing for faster processing times and lower fees.

For digital currencies to succeed they have to be trustworthy and that necessarily implies the recognition of governments and financial institutions. This is going to be hard for digital currencies like bitcoin that are by design antiestablishment. In March of this year, the U.S. Financial Crimes Enforcement Network (FinCEN) clarified rules set in 2008's Bank Secrecy Act (BSA) which governs digital currencies. Under the BSA, exchanges and administrators of digital currencies are considered money-services business (MSB) which requires federal and state registration.

Compliance can be complex and expensive since each state has different regulations. As a result, some players backed down from developing their digital currencies. Such was the case of Facebook's Credits and Microsoft Points. However, other players such as Amazon are willing to bear the regulatory cost of developing a digital currency. The company is a registered MSB in full compliance, has a license in all 50 states, and has rolled out Amazon Coins. Since this is just the beginning, we expect multiple business models that leverage digital currencies to emerge. The new generation will compete with each other to gain the trust of the public and compete with fiat currencies.

## Bottom line:

Predicting how these trends will evolve is not easy. Back in the late nineties, Napster shook the music industry by creating a platform where users around the world could exchange music in an mp3 format. The business model combined two innovations, the internet and digital music. Its success was immediate, with tens of millions of users, but the music industry sued Napster arguing "copyright infringement." Although Napster was forced to shut-down, digital music evolved to a point where business models like iTunes found a way to maximize the potential of the technology without ignoring intellectual property. Tech giants could develop processing capacity and become clearing houses of digital currency either on their own or through joint ventures with financial institutions.

Successful digital currencies must reach a balance between convenience and compliance. Trust in the U.S. dollar comes from the strength of the economy and its institutions. Would people trust a currency that is backed by a private entity or an unknown developer? Would the average person hold its savings in a digital wallet rather than a bank account that is insured by a deposit guarantee fund? Who will be accountable for a failure in the systems that create the digital currencies? These and other questions have to be considered by future developers. Massive adoption cannot be achievable merely by improving the complexity of an algorithm but also by embracing transparency and accountability.

Just like the music industry could not fight the disruption caused by the internet and digital music, governments and financial institutions are beginning to recognize the emergence of digital currencies. It's only a matter of time before new models of digital currency become main-stream. The massive adoption of digital currency opens the door to new and different competitors in the financial system. Therefore, financial institutions and regulators who understand and eventually embrace the digital currency are most likely to lead the new digital monetary system.

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