Cryptocurrency

Key Takeaways

- The first known cryptocurrency, called Bitcoin, was proposed following the 2008 global financial crisis and allowed peer-to-peer transactions to take place, eliminating the need for intermediary financial authorities, being the first fully decentralized commercial system of its kind.
- Cryptocurrency has been determined a commodity under the Commodity Exchange Act.
- Examples of cryptocurrencies include Bitcoin, Ethereum, and Litecoin.
- Proponents of the technology assert cryptocurrencies will become a widely used payment method and provide increased economic efficiency, privacy, and independence from centralized institutions and authorities.
- Skeptics— citing technological challenges and obstacles to widespread adoption—assert cryptocurrencies do not effectively perform the functions of money and will not be a valuable, widely used form of money in the future.
- As technological advancements and economic conditions play out, policymakers likely will be faced with various issues related to cryptocurrency, including concerns about its alleged facilitation of crime, the adequacy of consumer protections for those engaged in cryptocurrency transactions, the level of appropriate regulation of the industry, and cryptocurrency's potential effect on monetary policy.

Questions

1. **Does cryptocurrency have an opportunity in the agriculture sector?**
2. **What are the risks and benefits for farmers?**
3. **Is cryptocurrency a viable alternative to a centralized monetary system?**

Background

In 2008, an unknown computer programmer or group of programmers created a computer platform allowing users to make valid transfers of digital representations of value. The first known cryptocurrency, called Bitcoin, was proposed following the 2008 global financial crisis and allowed peer-to-peer transactions to take place, eliminating the need for intermediary financial authorities, being the first fully decentralized commercial system of its kind**. A cryptocurrency is digital money in an electronic payment system in which payments are validated by a decentralized network of system users and cryptographic protocols instead of by a centralized intermediary such as a bank.**

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Since 2009, cryptocurrencies have gone from little-known, niche technological curiosities to rapidly proliferating financial instruments and are the subject of intense public interest. Recently, they have been incorporated into a variety of other financial transactions and products. Some government central banks have examined the possibility of issuing cryptocurrencies or other digital currency. Media coverage of cryptocurrencies has been widespread, and various observers have characterized cryptocurrencies as either the future of monetary and payment systems displacing government-backed currencies or a fad with little real value.

When analyzing the public policy implications posed by cryptocurrencies, it is important to keep in mind what these currencies are expressly designed and intended to be— an alternative to traditional electronic payment systems.

In general, these electronic payment systems use public ledgers allowing individuals to establish an account with a pseudonymous name known to the entire network and a passcode paired to the public key and known only to the account holder. From the perspective of the individuals using the system, the mechanics are similar to authorizing payment on any website requiring an individual to enter a username and password. A transaction occurs when two parties agree to transfer cryptocurrency (perhaps in payment for a good or service) from one account to another. The buying party will unlock the cryptocurrency they will use as payment with their private key, allowing the selling party to lock it with their private key. **In general, to access the cryptocurrency system, users will create a "wallet" with a third-party cryptocurrency exchange or service provider.** In addition, certain companies offer applications or interfaces users can download onto a device to make transacting in cryptocurrencies more user-friendly.

Cryptocurrency platforms often use blockchain technology to validate changes to the ledgers. Blockchain technology uses cryptographic protocols to prevent invalid alteration or manipulation of the public ledger. Specifically, before any transaction is entered into the ledger and the ledger is irreversibly changed, some member of the network must validate the transaction. *(See Blockchain policy development backgrounder from 2018)*

Potential Benefits of Cryptocurrencies

The use of cryptocurrencies as money in a payment system is still quite limited compared with traditional systems. However, the invention and growth in awareness of cryptocurrencies

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occurred only recently. Some observers assert cryptocurrencies' potential benefits will be realized in the coming years or decades, which will lead to their widespread adoption. **Skeptics emphasize the obstacles facing the widespread adoption of cryptocurrencies and doubt cryptocurrencies can overcome these challenges.**

Potential Economic Efficiency

Proponents assert cryptocurrency may provide an especially pronounced cost advantage over traditional payment systems for international money transfers and payments. Sending money internationally generally involves further intermediation than domestic transfers, typically requiring transfers between banks and other money transmitters in different countries and possibly exchanges of one national currency for another. **Proponents assert cryptocurrencies could avoid these particular costs because cryptocurrency transactions take place over the internet—which is already global—and are not backed by traditional currencies.**

What bears mentioning here is certain costs of traditional payment systems—and, in particular, the fees intermediaries in those systems have charged consumers—have at times been high enough to raise policymakers' concern and elicit policy responses. For example, in response to retailers' assertions Visa and MasterCard had exercised market power in setting debit card swipe fees at unfairly high levels, Congress included Section 1075 in the Dodd-Frank Consumer Protection and Wall Street Reform Act (Dodd-Frank Act; P.L. 111-203)—sometimes called the "Durbin Amendment." Section 1075 directs the Federal Reserve to limit debit card swipe fees charged by banks with assets of more than $10 billion. In addition, studies on unbanked and underbanked populations cite the fees associated with traditional bank accounts, a portion of which may be the result of providing payment services, as a possible cause for those populations' limited interaction with the traditional banking system. **Proponents of cryptocurrencies argue an increase in the use of cryptocurrencies as an alternative payment system would reduce these costs through competition or would eliminate the need to pay them altogether.**

An Alternative to Existing Intermediaries and Systems

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A person may mistrust traditional private financial institutions for a number of reasons. An individual may be concerned an institution will go bankrupt or otherwise lose his or her money without adequately apprising him or her of such a risk (or while actively misleading him or her about it). In addition, opening a bank account or otherwise using traditional electronic payment systems generally requires an individual to divulge to a financial institution certain basic personal information, such as name, social security number, and birthdate. Financial institutions store this information and information about the transactions linked to this identity. Under certain circumstances, they may analyze or share this information, such as with a credit-reporting agency. In some instances, hackers have stolen personal information from financial institutions, causing concerns over how well these institutions can protect sensitive data. Individuals seeking a higher degree of privacy or control over their personal data than afforded by traditional systems may choose to use cryptocurrency.

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Certain individuals also may mistrust a government's willingness or ability to maintain a stable value of a traditional currency. Because traditional currency does not have intrinsic value and, historically, incidents of hyperinflation in certain countries have seen government-backed currencies lose most or nearly all of their value, some individuals may judge the probability of their traditional money losing a significant portion of its value to be undesirably high in some circumstances. These individuals may place greater trust in a decentralized network using cryptographic protocols limiting the creation of new money than in government institutions.

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<u>Potential Challenges to Widespread Adoption</u>

The appropriate policy approach to cryptocurrencies likely depends, in part, on how prevalent these currencies become. For cryptocurrencies to deliver the potential benefits mentioned above, people must use them as money to some substantive degree. After all, as money, cryptocurrencies would do little good if few people and businesses accept them as payment. For this reason, currencies are subject to network effects, wherein their value and usefulness depends in part on how many people are willing to use them. Currently, cryptocurrencies face certain challenges to widespread adoption.

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Challenges to Effectively Performing the Functions of Money

Criminals and terrorists are more likely to conduct business in cash and to hold cash as an asset than to use financial intermediaries such as banks, in part because cash is anonymous and allows them to avoid establishing relationships with and records at financial institutions which may be subject to anti-money laundering reporting and compliance requirements. Some observers are concerned the pseudonymous and decentralized nature of cryptocurrency transactions may similarly provide a means for criminals to hide their financial dealings from authorities. For example, Bitcoin was the currency used on the internet-based, illegal drug marketplace called Silk Road. This marketplace and Bitcoin escrow service facilitated more than 100,000 illegal drug sales from approximately January 2011 to October 2013, at which time the government shut down the website and arrested the individuals running the site.

Technological Challenges: Scaling, Transaction Validation Speed, and Energy Consumption

Whether cryptocurrency systems are scalable—meaning their capacity can be increased in a cost-effective way without loss of functionality—is uncertain. The technologies and systems underlying cryptocurrencies do not appear capable of processing the number of transactions which would be required of a widely adopted, global payment system.

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Part of the reason for the relatively slow processing speed of certain cryptocurrency transactions is the large computational resources involved with mining—or validating—transactions. When prices for cryptocurrencies were increasing rapidly, many miners were incentivized to participate in validating transactions, seeking to win the rights to publish the next block and collect any reward or fees attached to the block. This incentive led to an increasing number of miners and to additional investment in faster computers by new and existing miners. The combination of more miners and more energy required to power their computers led to ballooning electricity requirements. The energy consumption required to run and cool the computers involved in cryptocurrency mining is substantial. Some estimates indicate the daily energy needs of the Bitcoin network are comparable to the needs of a small country, such as Ireland.

Potential Risks Posed by Cryptocurrencies

Policymakers developed most financial laws and regulations before the invention and subsequent growth of cryptocurrencies, which raises questions about whether existing laws and regulations appropriately and efficiently address the risks posed by cryptocurrency**. Some of the more commonly cited risks include the potential cryptocurrencies will be used to facilitate criminal activity and the lack of consumer protections applicable to parties buying or using cryptocurrency.**

Tax Evasion

Individuals could potentially use a pseudonymous, decentralized platform (and thus avoid generating records at traditional financial institutions) as a mechanism for hiding income from tax authorities. The potential for cryptocurrency use in tax evasion is illustrated by the difficulty the Internal Revenue Service (IRS) experienced, as least initially, in identifying individuals who owed taxes on cryptocurrency gains and in collecting those taxes. The IRS has issued guidance stating virtual currencies are treated as property (as opposed to currency) for tax purposes, meaning users owe taxes on any realized gains whenever they dispose of virtual currency, including when they use it to purchase goods and services. However, there is a lack of clarity surrounding whether and to what degree people are appropriately declaring gains from cryptocurrency on their tax returns.

The prevalence of using cryptocurrency to avoid taxes is uncertain. The language in certain variations of the letters the IRS sent indicates the IRS did not think these recipients' failure to pay was intentional.

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<u>Consumer Protections</u>

Although there is no overarching regulation or regulatory framework specifically aimed at providing consumer protections in cryptocurrencies markets, numerous consumer protection laws and regulatory authorities at both the federal and state levels are applicable to cryptocurrencies.

In addition, all states have laws against deceptive acts and practices, and state regulators have enforcement authorities could be exercised against cryptocurrency-related businesses. Additional consumer protections generally are applied to cryptocurrency exchanges at the state level through money

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transmission laws and licensing requirements. Money transmitters, including cryptocurrency exchanges, must obtain applicable state licenses and are subject to state regulatory regimes applicable to the money transmitter industry in each state in which they operate.

Possible Effects of Widespread Adoption of Private Cryptocurrencies

The mechanisms through which central banks implement monetary policy can be technical, but at the most fundamental level these banks conduct monetary policy by regulating how much money is in circulation in an economy. Currently, the vast majority of money circulating in most economies is government-issued money, and so governments (particularly credible governments in countries with relatively strong, stable economies) have effective control over how much is in circulation.

However, if one or more additional currencies the government did not control (such as cryptocurrencies) were also prevalent and viable payment options, their prevalence could have a number of implications. The widespread adoption of such payment options would limit central banks' ability to control inflation, as they do now, because actors in the economy would be buying, selling, lending, and settling in cryptocurrency. **Central banks would have to make larger adjustments to the traditional currency to have the same effect as previous adjustments, or they would have to start buying and selling the cryptocurrencies themselves in an effort to affect the availability of these currencies in the economy.**

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Summary

The future role and value of cryptocurrencies remain highly uncertain, due mainly to unanswered questions about these currencies' ability to effectively and efficiently serve the functions of money and displace existing money and payment systems**. Proponents of the technology assert cryptocurrencies will become a widely used payment method and provide increased economic efficiency, privacy, and independence from centralized institutions and authorities. Skeptics— citing technological challenges and obstacles to widespread adoption—assert cryptocurrencies do not effectively perform the functions of money and will not be a valuable, widely used form of money in the future.** As technological advancements

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Policy

Economic Policy (Partial)

We support the continued use of physical currency and recommend the US government continue to produce a sufficient supply of coin and paper currency. Farm Bureau should monitor the emerging concept of cryptocurrencies. With any new technology there are potential threats and opportunities for our economy.

An independent Federal Reserve System protects our monetary system, controls inflation, and maintains the value of our money.