
Navigating the World of Virtual Currencies

Lesson Objectives

- Discover how virtual currencies and distributed ledger networks function
- Develop an understanding of the speculative nature and volatility of virtual currency
- Deepen knowledge of investments and speculative asset classes
- Demonstrate knowledge of terminology, risks, and rewards

Introduction and Opening Questions

This lesson provides an overview of virtual currencies as well as risks and potential rewards.

- Social and traditional media have been buzzing with articles and information about the rising phenomenon of virtual currencies. Words and phrases like bitcoin, blockchain, cryptocurrency, distributed ledger, initial coin offering, and digital tokens are popping up in various media outlets.
- While there is excitement around this novel asset, virtual currencies as they currently stand, are not very practical or efficient, for daily transactions. As newer assets, virtual currencies also lack maturity and are highly speculative.
- Let's explore the basic elements of virtual currencies and discuss the information that is needed to help you make informed financial decisions
- According to the Commodity Futures Trading Commission (CFTC), **cryptocurrency or virtual currencies**, like **Bitcoin**, are “a digital representation of value that functions as a medium of exchange, a unit of account and/or store of value”. In other words, each currency is represented by alphanumeric codes that may be generated and recorded on a distributed ledger network, such as **Blockchain**, and recognized as a secure method of payment by users on that network.

Let's break this apart:

- Bitcoin is a type of cryptocurrency that operates through a limited peer-to-peer electronic payment system to transact business. Bitcoins are not issued by banks or governments. Cryptocurrency, in general, is represented by numbers with mathematical properties in an attempt to secure the online/virtual transaction.

- Blockchain, a type of distributed ledger technology managed by peer-to-peer networks, is a critical feature of virtual currencies - including bitcoin - because it prevents users from double spending their coins and creates a permanent transaction record. While the blockchain network is highly mathematically secure, access on and off of the network (for example, where you store your keys in your wallet) remains in the public domain and does not have the same level of security.

Procedures

Before introducing activities, lead a discussion about investing, in general, and cryptocurrency, specifically.

1. Wealth is a set of resources—savings, property, investments—you can use to create and take advantage of life’s opportunities. Building wealth usually doesn’t happen overnight, in a year, or even five years. It’s a series of steps that you take over time. The steps are simple to explain, but a lot harder to do. You have to discipline yourself to make wealth-building a lifelong pattern. If you do, you’ll keep getting better at it as time goes on.
2. Investing, one component of wealth building, involves taking risk; however, it is important to understand the extent and type of risk you are taking. When making investment decisions, it is important to understand the fundamentals of sound investments. These guidelines should apply in all of your investment decisions – whether traditional or novel.
3. Mainstream media is fascinated by virtual currencies but knowing about virtual currencies and investing in them are two very different things. Investing in virtual currencies can take many forms and carries significant risk. It is important to understand what you are investing in. For example, if you have a Treasury bond or a share of corporate stock, you can discuss the value of the federal government and of the corporation. With virtual currencies, it is important to understand the underlying value of the asset.
4. Another important guideline is to only invest what you understand and can afford to lose. Be aware that you may lose some or all of your investment. As with other types of investing, virtual currency investing has its share of fraud and scams, not to mention cyberattacks.
5. There are also major questions about how these currencies are regulated both domestically and across the globe. Generally, less regulation means less protection for investors. The Securities Exchange Commission has launched Howey Coins, visit <https://www.howeycoins.com/index.html>, to learn more about how the U.S. federal government is helping to educate investors on fraudulent initial coin offerings.

Materials

Article: Virtual Currencies

Paper (Flip chart paper)

Writing utensils (pens/pencils)

Two fly swatters

Activities

Activity 1: PSA - The World of Virtual Currency: Vital Questions

Activity 2: Fly Swatter Activity

Lesson Summary/Closure

- Investing always involves risk.
- There are lots of possible investments and all have varying levels of risk. Examples include stocks, bonds and real estate.
- Take time to research investments using unbiased resources.
- Never invest money that you can't afford to lose.

Activity 1: PSA - The World of Virtual Currency: Vital Questions

In both social and traditional media circles, virtual currencies are often discussed. Given the increased interest of this rising phenomenon, it is important that consumers understand both all components and characteristics. Knowing about virtual currencies and investing in them are two very different things. Investing in virtual currencies can take many forms: you can purchase coins in the hope they will appreciate, or invest in platforms that facilitate blockchain technology and other aspects of the virtual currency revolution and hope they succeed. Doing so carries significant risk. Only invest what you can afford to lose, and be aware that you may lose some or all of your investment. As with other types of investing, virtual currency investing has its share of fraud and scams, not to mention cyberattacks. There are also major questions about how these currencies are regulated both domestically and across the globe. Less regulation means less protection for investors.

Create a public service announcement (PSA) that can help consumers better understand aspects of virtual currencies. Use the topics below to guide your research and PSA or think of other questions worthy of exploration:

- Is regulation important?
 - Can regulations be considered consumer protection?
 - What are the pros and cons of regulation?
 - What information, from government entities such as the Securities Exchange Commission (SEC), Commodity Futures Trading Commission (CFTC), and Federal Reserve Board (FRB), is published for consumers?
 - Without regulation – or with limited regulation – how might a consumer be financially compromised?
- The U.S. Dollar is considered “legal tender” but what does this mean? Does cryptocurrency have similar characteristics as the U.S. Dollar? Why or why not? In what ways does it matter?
- A public offering occurs when investments and securities are launched and offered publicly for investors. What’s the difference between an Initial Price Offering and an Initial Coin Offering? How do investors participate? To learn more about Initial Coin Offerings, visit:
<https://www.howeycoins.com/index.html>
- Fraudsters and scammers love to jump on emerging trends. What are the important considerations to protect yourself from being taking advantage of? What government agencies can help to provide helpful information that can be used to make smart money decisions? What are some of the best practices when dealing with unsolicited and internet-based investment offers?

Activity 2: Fly Swatter Activity

1. Attach two pieces of paper (preferably, flip chart paper) to the wall. On one piece of paper, write “True” and on the other, write “False.”
2. Divide the group into two teams.
3. Give the first student in line on each team a flyswatter.
4. Instructor will read the game statements.
5. After each statement is read, the participant at the front of each line holding the fly swatter will try to be the first to answer the question by “hitting” either the True or False written on the flip chart paper. (If time permits, and as appropriate, ask students to elaborate on why a statement is true or false.
6. The first individual to get the answer correct, wins a point for his/her team.
7. The fly swatter is then passed to the next participant in line – there should be enough statements for everyone to get a chance.
8. The team with the most points wins the game.

Fly Swatter game statements:

- Virtual currencies, such as cryptocurrency is considered legal tender. (F)
- Less regulation means more protection for consumers and investors. (F)
- There is only one type of cryptocurrency. (F)
- A nickname for cryptocurrency is crypto. (T)
- Bitcoin is a type of cryptocurrency. (T)
- Blockchain powers the Canadian dollar. (F)
- Purchasing any virtual currencies carries a significant amount of risk. (T)
- An initial coin offering (or ICO) is a type of IPO. (F)
- The SEC has found no fraud or scams associated with cryptocurrency. (F)
- There are thousands of cryptocurrencies. (T)
- Records on blockchain cannot be altered. (T)
- Blockchain can create networks free from a single point of failure. (T)
- Scammers have posed as legitimate websites that provide services to cryptocurrency users to target unknowing users. (T)
- All investments have varying levels of risk. (T).
- Virtual currencies are a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value. (T)
- Digital, or virtual, currency is not legal tender. (T).
- Companies and individuals must accept bitcoin as a form of payment. (F)
- If no one accepts bitcoins, bitcoins may become worthless. (T)
- A good rule is to only invest what they can afford to lose. (T)

About Virtual Currencies

According to the Commodity Futures Trading Commission, virtual currencies are "a digital representation of value that functions as a medium of exchange, a unit of account and/or a store of value." In other words, each currency is represented by alphanumeric codes that may be generated and recorded on a blockchain network and recognized as a method of payment by users on that network. In some cases, you can spend and trade virtual currencies, but these products do not have the same legal status as money, or "legal tender," in the United States, Canada, Mexico, and other jurisdictions.

While not considered "legal tender", the Internal Revenue Service treats virtual currencies as property for U.S. federal tax purposes, with transactions required to be reported in U.S. dollars. If you hold virtual currencies for personal or investment purposes, the IRS requires you to report any gains or losses, which would be subject to capital gains tax rules.

One popular type of virtual currency is known as cryptocurrency, or simply crypto. The term crypto refers to the process of cryptography (the Greek word *kryptos* means hidden), which is a mathematically intensive encryption process designed to enhance data protection and authentication. Some people are interested in cryptocurrencies for their perceived anonymity and ability to keep transactions secret, and one of the earliest and perhaps most well-known cryptocurrencies is bitcoin.

Understanding Bitcoin

Bitcoin, developed in 2009, by an anonymous person or group of persons operating under the nickname Satoshi Nakamoto is one type of cryptocurrency. Like other cryptocurrencies, bitcoin is distinct from "fiat currencies" such as the dollar, euro, renminbi or yen because it isn't represented or organized by a physical paper unit or coin. Rather, each bitcoin is a unique alphanumeric string of computer code. Rather than being issued like fiat currencies by a central bank, a currency such as bitcoin is controlled by technology that determines how many bitcoins are produced and how transactions that use bitcoin are recorded. It is not controlled by any central bank or government. Bitcoin, specifically, is exchanged on the Bitcoin Network, a peer-to-peer payment system that operates using cryptography. Users can send and receive bitcoins by broadcasting digitally signed messages to the network using a cryptocurrency wallet. Transactions on the Bitcoin Network are recorded on a publicly distributed ledger called a blockchain, and validated by a proof-of-work system called mining.

Think of it as a sophisticated computer program that encrypts, verifies and records bitcoin transactions. Bitcoins are created by a process called "mining", which serves two purposes. First, miners use software algorithms to add transaction records to Bitcoin's public ledger of past transactions and verify legitimate bitcoin transactions. For their efforts, Bitcoin miners get transaction fees. In addition, if the miner finds a new "block," the miner is awarded new bitcoins. Bitcoins can also be bought and sold online or at physical locations. A growing number of physical establishments and exchanges allow customers to buy and sell bitcoins



using cash, credit cards, money orders and other methods. Also, bitcoin ATMs can be used to access funds. Bitcoins reside in a digital "wallet," where they can be used to purchase items from establishments that accept bitcoins. Bitcoins can be traded for traditional currency at exchange rates that fluctuate. Bitcoin prices have been extremely volatile, and subject to wide price swings.

There are many cryptocurrencies and their purpose, functionality, and use may vary. Other cryptocurrencies include Litecoin and Ethereum. Litecoin, created in 2011, is similar in many respects to bitcoin but it is not identical, since it uses a different mining algorithm. Ethereum (2015), is in fact a platform for "smart contracts", or conditional transactions, when payment is made. For example, using computer code, a smart contract can unlock a rental car door once payment is made eliminating the need for a rental car front office or desk. Ethereum has its own cryptocurrency known as Ether, which can be the form of payment used on these smart contracts.

Understanding Blockchain

Blockchain, also known as distributed ledger technology, powers bitcoin and many other virtual currencies and functions through peer-to-peer networks. In the case of bitcoin, blockchain functions through the participation of many individuals who offer their computing power to maintain the Bitcoin Network and record transactions (for instance, when someone trades or spends bitcoins). Blockchain technology was originally engineered to prevent fraud during the exchange and payment of virtual currencies, such as Bitcoin. Each "block" in a chain is comprised of a series of records secured by cryptography that describe preceding and current transaction data. Blockchain technology is the critical feature of bitcoin because it prevents users of bitcoin from double spending their coins and creates a permanent record of transactions.

Blockchain has captured the attention of many people that view it as an emerging and potentially transformative technology. Blockchain technology is viewed as an attractive alternative to records maintained on a central database. This is because risk and management are shared among a number of different users and allows all parties on the network to have access to a shared, identical, irreversible ledger of transactions. In other words, there is shared administration and accountability of the blockchain, including the verification of new additions to the blockchain, which enforces the network's security. This can be done while maintaining privacy and without sharing details of the records to participants who are not entitled to view them. Additionally, because records on a blockchain cannot be altered, it is very difficult for a bad actor to falsify or alter transaction data. Blockchain proponents believe that this technology facilitates the creation of networks free from a single point of failure.

Understanding Frauds and Scams

Buying, selling and using cryptocurrency carry numerous risks, from speculation to scams. Speculators have been drawn to bitcoin trading as a way to make a quick profit. But like any speculative investment, you can lose money. Bitcoin prices have fluctuated widely, and

wildly, almost from its creation. Factors that affect digital currency prices include supply and demand as well as media reports and rumors. Never speculate with money you cannot afford to lose. While profits or losses are virtually impossible to predict, crypto speculation is extremely risky.

Additionally, virtual currency is not legal tender and transactions can be subject to fraud and theft. For example, a fraudster could pose as a Bitcoin exchange, Bitcoin intermediary or trader in an effort to lure you to send money, which is then stolen. Unlike regulated financial institutions that provide certain guarantees of safety to depositors, there are no such safeguards provided to digital wallets. Bitcoin payments are irreversible. Once you complete a transaction, it cannot be reversed. Purchases can be refunded if the establishment is willing to do so.

In part because of the anonymity Bitcoin offers, reports of illegal activity, including drug dealing, money laundering and other forms of illegal commerce have emerged. Illegal activity and abuses could impact consumers and speculators; for instance, platforms and exchanges could be shut down or limits could be placed on the ability to use or trade crypto.

Fraudsters and scammers have looked for ways to take advantage of the virtual currency excitement. It is important to note that initial coin offerings have been established solely to defraud consumers. Warning signs of fraud include business claims that are not backed by financial reality. Fraudsters love to jump on emerging trends and aggressively target consumers with a variety of scams. Scammers have posed as legitimate websites that provide services to cryptocurrency users to target unknowing users. The world of virtual reality is relatively new so it's important to be wary of unsolicited and internet-based investment offers. As a general rule, never wire money to pay for an unsolicited offer or service.

Before you make any investment decisions, it is critical to understand some of the concepts underlying this emerging world of virtual currencies. Consider these important questions as you get started and evaluate options:

- Do I understand it?
- Can I explain it?
- What are you trying to get out of it? What are my expectations?
- What is the basis of my investment?
- How much risk am I willing to assume?
- How do I feel about potentially losing all of my investment?
- Can I find reliable and unbiased information on this investment?
- What does accepting risk mean?
- What general online safety strategies can you apply to investments?

¹ FINRA and the BBB Institute (2018). Getting a Handle on Virtual Currencies

² FINRA and the BBB Institute (2018). What is Bitcoin and Why Should I Care?

³ FINRA and the BBB Institute (2018). Bitcoin: More than a Bit Risky



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End of Lesson Assessment

Based on the information I learned:

| | Definitely | Maybe | Probably Not | Definitely Not |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| I know how to research investments and make informed decisions. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I know that investing involves risk. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

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End of Lesson Assessment

Based on the information I learned:

| | Definitely | Maybe | Probably Not | Definitely Not |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| I know how to research investments and make informed decisions. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I know that investing involves risk. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |