

A SEPARATE ASSET CLASS FOR CRYPTOCURRENCY

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by

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of the Requirements for the Degree of

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Abstract

The purpose of this qualitative study was to research the need for a separate asset class for cryptocurrency. The researcher found a lack of research on this topic and conducted research that provides more information on the topic than is currently in existence. The researcher examined the effects of classification and lack of classification of cryptocurrency as an asset class. This research provided a greater understanding of how cryptocurrency is working without a separate asset classification and added to the current research on the topic. The researcher interviewed multiple people, all with various forms of involvement with cryptocurrency. The interview participants were all pro cryptocurrency and believed in the future of cryptocurrency. The research participants were asked questions about the different asset classes, opinions on the need for a separate asset class for cryptocurrency, regulation, the level of government's involvement, and the governmental agencies that would be involved in the cryptocurrency regulation. The researcher and the interviewees identified different thoughts on the need for separate asset classification for cryptocurrency and the level of importance for this action. Additionally, the researcher made multiple recommendations for action by the government and cryptocurrency enthusiasts. Due to cryptocurrency's constant evolution, the researcher supported the need for continuous research on cryptocurrency, potential classification, and regulation.

Keywords: cryptocurrency, asset class, classification, regulation, bitcoin

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Dedication

I dedicate this doctoral research to my three sons. They have provided me with purpose and the meaning of life. Everything I do, I do for you.

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First and foremost, I would like to thank my family for their sacrificed time and consistent encouragement. I could not have completed this daunting task without their support. I hope I have provided you with an example of determination and perseverance.

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Next, I'd like to express my gratitude to Dr. Jamie Stowe. I would like to thank Dr. Stowe for teaching me that research involves multiple sides and opinions, not just my own. Additional thanks to Dr. Stowe for performing the role of the reader and pushing me for my best writing and research effort.

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Section 1: Foundation of the Study

This qualitative study examines the need for a separate asset class for cryptocurrency. This study will research the connection between establishing a separate asset class for cryptocurrency and governments' ability to regulate cryptocurrency. Cryptocurrency is a new topic; most of the literature reviewed was within the last five years, with the exception of literature about the inception and transformation of money. Ulyanova (2018) emphasized that lawyers, economists, and financiers have all had numerous discussions on the regulation of cryptocurrencies, but currently, there is no consensus on asset classification and regulation. Global opinions and approaches to cryptocurrency were also researched in this study, and again, no consensus was found on how the various countries defined cryptocurrency. With multiple definitions of cryptocurrency (property, asset, virtual currency, virtual items, and property rights), Ulyanova (2018) pointed out there are several approaches available for classification.

Background of the Problem

Aitken (2016) claimed that despite the increased interest in cryptocurrency, academic research on cryptocurrency has only recently started to emerge. This lack of academic research attributes to the confusion of what cryptocurrency is and how to classify it. With the increased new curiosity in cryptocurrency, the academic interest will grow. Villaverde (2018) stated that cryptocurrency has gone from a quiet discussion amongst mild-mannered theorists to the center of unparalleled attention. Feder et al. (2018) stated that over the last three years, the market for cryptocurrency has exploded with the number of coins increasing tenfold.

Currently, cryptocurrency is not part of an existing asset class, and to date, no consensus has been reached on their place within the conventional asset classes (Charfeddine et al., 2019). Additionally, Bianchi (2017) stated that the amount of work investigating cryptocurrencies as an

asset is small. Low and Teo (2017) discussed the limited attention cryptocurrency asset classification has received and the challenges associated with regulating it like the other asset classes. This study will expand that attention and further research the challenges associated with governments' ability to regulate cryptocurrency. Brainard (2018) believed that as the popularity of cryptocurrency grows, research like this study will become more prevalent.

According to some, cryptocurrency represents an entirely new asset class (Araya, 2018). Ankenbrand and Bieri (2018) discussed that current literature shows a consensus for asset classes for stocks, bonds, and cash equivalents but there is a lack of consensus on cryptocurrencies as an individual asset class or sharing any similarities to asset classes for stocks, bonds, and other commodities. Deloitte issued a financial alert in 2018 stating their belief cryptocurrencies should be accounted for as an indefinite-lived intangible asset. Deloitte (2018) further stated that cryptocurrencies are not financial assets. With Venezuela declaring their cryptocurrencies as financial assets, Chandler (2018) showed there is a lack of consensus on cryptocurrency. Deshpande (2018) asserted that without a regulated trading exchange, cryptocurrency will fall short of becoming a legitimate asset class. This study will explore what qualifies as a new asset class. According to Markowitz et al. (2017), one of the qualifiers is an item needs to be investable to be an asset class. Dyhrberg et al. (2018) found that the cryptocurrency trade volume is positively correlated with volatility and negatively correlated with spreads like other investable items and suggests cryptocurrency like bitcoin is investible.

The lack of research does not equate to a lack of opinions. Brainard (2018), a member of the Board of Governors at the Federal Reserve, told an audience at the Decoding Digital Currency Conference, the lack of governance and legal context will result in mistakes, thefts, and security breaches. Stratiev (2018) believed at this moment, the regulation of cryptocurrencies is

in the state of legal inertia. Stratiev (2018) attributed this to a lack of understanding coupled with a lack of research, and by the time the regulation comes out, cryptocurrency may be obsolete.

Problem Statement

The general problem to be addressed is the inability to determine an asset class for cryptocurrency, resulting in governments' inability to regulate it. Cryptocurrencies show characteristics of a distinct asset class based on strong internal correlation, an absence of correlation with any traditional asset class (Kruckeberg & Scholz, 2018). Since 2009, cryptocurrency has gained traction as an investible commodity like stocks and bonds, but where stocks are regulated by the Securities and Exchange Commission (SEC), and commodities by the Commodity Futures Trading Commission (CFTC), cryptocurrencies are absent of a regulating hand (Araya, 2018). Banking institutions have discussed and reviewed the addition of cryptocurrency services to their list of products and offerings, but without any current regulations, this would be risky.

Besides the banking industry, politicians are starting to get involved with asset classification of cryptocurrency. Seeing the need to create an asset class for cryptocurrency, Warren Davidson, a US Representative from Ohio, proposed a bill on December 3, 2018, outlining the need for a separate asset class. The Republican intends to introduce legislation in the House of Representatives to develop an exclusive asset class for cryptocurrencies, allowing for a clearer path to government regulation (Bamforth, 2018). The specific problem to be addressed is the lack of consensus regarding classification of cryptocurrency as an asset class such as currency, money, or an investment vehicle resulting in the inability of the United States government to regulate it.

Purpose Statement

The purpose of this qualitative case study is to explore the lack of consensus regarding classification of cryptocurrency as a new asset class and the inability of governments to regulate it. This qualitative research will discuss the positive and negative effects for stakeholders if cryptocurrency is classified as its own asset class. Brainard (2018) articulated governance may need to evolve over time, but one thing that is clear is that strong governance arrangements will be required to provide the coordinated operational and financial risk management. This case study will discuss the governments' ability to classify cryptocurrency as an asset and explore current regulatory strategies by the United States government. This research paper will examine the distinct characteristics that make cryptocurrency an asset and the need to create a separate asset class for cryptocurrency. This case study will explain the asset qualities of cryptocurrency and the similarities cryptocurrency has with other assets. This qualitative study will describe the current regulation of other assets and their similarities to cryptocurrency regulation. This study will describe the reasons for regulating cryptocurrencies as similar to those for other financial assets and which government agencies would potentially be the regulating authority. According to Auer and Claessens (2018), these reasons can be classified into three categories: combating the use of funds for illicit activities, protecting consumers and investors against fraud; and ensuring the integrity of markets, payment systems, and overall financial stability.

Nature of the Study

Kapur (2018) claimed that research focuses on improving quality and is a search for knowledge. This study searches for knowledge about cryptocurrency, specifically the asset classification of cryptocurrency. "Research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and

interpretation” (Creswell & Creswell, 2017). Pramodini and Sophia (2012) compared research to a quest for meaning, like a lamp, illuminating the passages and turning points as the researchers make their way through multifaceted and diverse questions and knowledge.

Discussion of Method

A researcher has three research methods to choose from: the qualitative method, the quantitative method, and the mixed method. Creswell and Creswell (2017) described the difference between qualitative and quantitative, as qualitative research is framed in terms of using words rather than numbers (quantitative). Perhaps, as Stake (2010) pointed out, the most essential methodological differences between qualitative and quantitative are twofold: the difference between (1) aiming for an explanation and (2) aiming for an understanding, and the difference between (1) a personal role and (2) an impersonal role for the researcher. Teddlie and Tashakkori (2009) have termed mixed methods research as the third methodological movement with quantitative and qualitative methods representing the first and second movements, respectively. Teddlie and Tashakkori (2009) further explained mixed-methods research at its core, involves research design that uses multiple methods – more than one research method or more than one worldview (i.e., quantitative or qualitative research approaches).

Quantitative Method

Watson (2015) explained that quantitative research involves measurements that assume the phenomena can be measured, and these measurements yield trends and relationships. Barczak (2015) defined quantitative research as an approach where the researcher identifies a theory related to the topic being studied, develops a hypothesis based on this theory, and then test the hypotheses with data. This study does not require the development of a hypothesis and the eventual testing of that hypothesis. This study will be an investigative research involving

understanding views and perceptions. Quantitative methods using numerical data or data from statistics are not needed or are not efficient for this investigative study.

Mixed-Method

Venkatesh et al. (2013) explained that mixed methods research uses quantitative and qualitative, either concurrently or sequentially, to understand a phenomenon of interest. Johnson and Turner (2003) further explained that mixed methods research can leverage the strengths and weaknesses of qualitative and quantitative methods and offer more significant insights on a phenomenon that each of these methods individually cannot offer. Using mixed methods would make the research more complicated and potentially increase the time need to complete the research. Giddings and Grant (2007) observed in many instances, what was actually mixed were methods rather than methodologies resulting in the qualitative research taking a subservient role. To achieve success in this research study, qualitative research methods need to be at the forefront.

Qualitative Method

Percy et al. (2015) stated that many studies report people's subjective opinions, attitudes, beliefs, or experiences. Aronson (1994) expressed such psychological things like this cannot be measured statistically and require qualitative methods. Qualitative work, according to Sutton and Austin (2015), requires reflection on the part of the researchers, both before and during the research process while reporting findings rather than results. Barczak (2015) declared that qualitative research typically follows an inductive approach to advance and build theory.

Given the less restrictive approach, the research method for this study was qualitative. The qualitative research method supports the interview approach of this study. The focus of this qualitative research is obtaining data through interviews and discussion. The interviews involved

specific people based on the topic of cryptocurrency. According to Belk et al. (2013), interviews are useful because they give voices to people's perceptions of experiences that are important to them. Berg and Lune (2012) proposed two types of interviews, standardized and semi-standardized. Berg and Lune (2012) explained that the standardized interview approach asks the same exact questions to each interviewee where the semi-standardized approach follows a specific theme but asks different questions based on the interviewee. Arsel (2017) recapped that the research should not be concluded with the interview questions, but the answers should provide further information for research. In qualitative interviews, Percy et al. (2015) recommended the questions be pre-structured based on pre-knowledge of the researcher, though there may have been a chance for open discussion questions.

The collected information from the qualitative research was based on interviews and discussion. These interviews were face to face, over the phone, potentially written responses to questions, and virtually using Skype, Hangouts, and Adobe Connect. The interviews were tailored to stimulate conversation, leading to a discussion that generated a significant amount of data. Sutton and Austin (2015) pointed out that regardless of the philosophical standpoint the researcher takes towards data collection, the process involved the generation of large amounts of data. Clark and Veale (2018) pointed out because the researcher is the primary instrument of data collection and analysis in qualitative research, focus, and interpretive thinking are critical.

Discussion of Design

A qualitative research study has multiple research design options. The researcher must decide on what design works best for the topic being researched. This design was used to collect and analyze data. Creswell (2014) explained that research designs are types of inquiry within

mixed methods, qualitative, and quantitative methods that yield a precise path for research design.

Narrative

Carless and Douglas (2013) explained that narrative methods reveal how psychological processes are influenced by sociocultural structures within which they unfold. Carless and Douglas (2017) stated that narrative research permits a focus on both the personal and the social. McAdams (1993) described narrative approaches as shedding light on one's personal experiences and telling stories about the events of one's life. Polkinghorne (2007) defined narrative research as the study of stories. Polkinghorne (2007) described these stories as ubiquitous, appearing as historical accounts, fictional novels, fairy tales, and other interpretations. This type of research method is not needed to complete a study involving cryptocurrency. Cryptocurrency is not fictional or a fairy tale.

Phenomenological

Diekelman (2005) explained in phenomenology; there is an overarching idea that meaning is embedded in human existence. In other words, according to Wilson (2015), people are naturally disposed to experience their world as meaningful. Finlay (2012) asserted that a central concern of phenomenologists is 'to return to embodied, experiential meanings.' Cypress (2018) explained that phenomenological interviewing is less concerned with factual accuracy than the plausibility of an account or whether it is true to our living sense. This type of interviewing would not produce the data needed for this research. Patton (2015) stated that phenomenological aims to elicit a comprehensive personal description of a lived experience of a phenomenon. The research on cryptocurrency asset classification did not include life experiences or phenomena.

Grounded Theory

According to Chun Tie et al. (2019) grounded theory sets out to discover or construct theory from data, systemically obtained and analyzed using comparative analysis. Mills and Birks (2014) referred to grounded theory as a process by which theory is generated from analysis of data. Annells (1996) warned researchers that grounded theory is not simple and must not be hurried as it may take months to fine-tune the theory around the core category. Annells (1996) further warned that a mentor should be available to help the researcher with the grounded theory method. Being a novice researcher in the category of cryptocurrency, grounded theory may not be a feasible method for this qualitative research.

Ethnography

Walle (2016) emphasized that ethnography usually examines a social pattern from the informants' point of view. Morse (2016) asserted that ethnographic research is inductive, with ongoing analysis and reflexivity playing a significant role in the research process. Morse (2016) continued to point out ethnographers have moved from seeking a global understanding of a culture to learning about whole communities, families, hospital units, and participants within the context of a single disease. Morse (2016) defined the ethnographic method as the foundation of anthropology and sociology, a social science theory, and is contributed to the quantification of social science fieldwork. Social and cultural studies were not be part of the interview questions for this study. Cryptocurrency research is not a social science therefor the ethnographic method will not be used for this study.

Case Study

For this qualitative research, the case study method was used. Case studies are in-depth investigations of a "single case" using multiple methods and multiple sources of data (Percy et

al., 2015). Yin (2014) believed the case study method is the best approach to collect and analyze data reasonably. Mills and Durepos (2013) ascertained the case study allow the researcher to focus on the use of multiple sources of data. The core of the case study is that it highlights a decision or decisions: why it was taken, how were they implemented, and with what result (Schramm, 1971). Case studies are designated as a flexible type of qualitative study appropriate for complete and detailed research of a complex issue, where boundary between the context and issue is unclear and contains many variables (Creswell, 2014).

Summary

The focus of this study was the inability to determine an asset class for cryptocurrency. This inability to classify cryptocurrency prevents governments' ability to regulate it. The qualitative research method was chosen to use interviewing as the primary tool to collect data. The interviews were with various individuals from different backgrounds relating to and affected by cryptocurrency and this research. Case study was the research design used for this qualitative study. The case study provided the researcher with the most versatility to study the research topic of cryptocurrency asset classification.

Research Questions

The research questions were created to reflect the intent of the qualitative study. The research questions are answerable inquiries for the problem statement and designed to initiate a discussion. The below research questions provide the foundation for the qualitative study.

RQ1. Does a new asset class need to be created for cryptocurrency?

RQ1a. Can the government classify cryptocurrency as a separate asset?

RQ2. Why has a consensus not been reached regarding classification of cryptocurrency as an asset class such as currency, money, or an investment vehicle?

RG3. Which stakeholders would benefit, and which would lose if cryptocurrency is classified?

RQ4. Does the United States government have a current strategy for regulating cryptocurrency?

RQ4a. Can governments regulate cryptocurrency? How?

RQ4b. What agency would regulate? How?

Conceptual Framework

Based on the approach of this study, Morse and Niehaus (2009) stated the conceptual process is one of discovery, and the research questions are answered by qualitative data. Sitwala Imenda in 2014 discussed explaining and predicting were common features that define theory. Liehr and Smith (1999) stated theories are made up of a group of unified concepts that create a view of phenomena for the purpose of explaining or predicting. Concepts reflect theoretical concerns and ideological conflicts (Imenda, 2014). Hornby (2005, as cited in Imenda, 2014) maintained that defining concepts is not an innocent exercise because of meanings and interpretations of concepts being defined by their context. Chinn and Kramer (1999) saw concepts as a complex mental formulation of experience and the component of theory that conveys the abstract ideas.

Framework is the guideline for the researcher. Liehr and Smith (1999) saw framework as the structure that guides the researcher as the research questions are formalized, and the research methods are selected and planned. Evans et al. (2011) argued that both theoretical and conceptual frameworks help the reader understand the reasons why the researcher studies a particular topic and their conceptual approach to that research. Evans et al. (2011) further elaborated that these

two frameworks serve the same purpose, but it is essential for the researcher to identify an appropriate conceptual or theoretical framework.

Defining Asset Classes

Markowitz et al. (2017, p. 2) defined an asset class as a “stable aggregation of investable units that is internally homogeneous and externally heterogeneous, that when added to a portfolio raises its expected utility without benefit of selection skill, and which can be accessed cost-effectively in size.” This breaks down into seven requirements for cryptocurrency to be considered an asset class: stable, investable, internally homogeneous, externally heterogeneous, expected utility, selection skills, and cost-effective access.

The first requirement of an individual asset class is stable aggregation. Aggregation is bringing a group of things into a cluster. Stable aggregation means that cluster is stable. Latham and Watkins (2015) described cryptocurrency as a digital asset that functions like money. Following this, Ankenbrand and Bieri (2018) stated cryptocurrency serves as a medium of exchange, unit of account, and store of value and these purposes distinguish cryptocurrencies from established asset classes like stocks, bonds, and commodities. Tokens signify a specific asset and can represent any assets that are tradeable (Zainuddin, 2017). Ankenbrand and Bieri (2018) called out cryptographic tokens as an asset class that is relatively stable.

Based on Markowitz et al.’s (2017) definition, cryptocurrency needs to be investable to qualify as an asset class. Burniske and White (2017) asserted that an asset class must be sufficiently investable, providing liquidity and opportunity to invest. This characteristic means investable to a broad range of investors. Currently, there are multiple ways to invest in cryptocurrency, but the main platform is digital exchanges. Hileman and Rauch (2017) classified the exchanges into three categories, one is known as an order-book exchange, the second is a

service that acquisition and selling cryptocurrencies at a given price, and third is a service that connects directly to other platforms for trading. The number of exchanges continue to grow, offering investors more access to investing in cryptocurrency.

Markowitz et al. (2017) defined internally homogeneous as all components of the asset class should be similar to each other, and externally heterogeneous as each asset class should be different from the other asset classes. These are two more requirements for cryptocurrency to be considered an asset class. In practice, according to Jones (2012), asset class refers to a useful cluster of investable assets. Internally homogeneous would indicate the cluster of investable assets are similar to each other. In the case of externally heterogeneous, a cryptocurrency asset class would need to be different from the other asset classes.

Kinlaw et al. (2017) asserted that the addition of an asset class to a portfolio should increase the portfolio's return and lower the portfolio's risk. This is expected utility, the fifth requirement for cryptocurrency to become an asset class. The Sharpe Ratio can be used to examine the expected utility. The Sharpe ratio is a measure of returns per unit of risk taken (Burniske & White, 2017). The sixth requirement for cryptocurrency to become an asset class is selection skills. Selection skills is requiring that the investor does not need to possess any specific selection skills to invest. Cost-effective access, the seventh requirement for cryptocurrency to become an asset is simply investing in cryptocurrency needs to be at a reasonable cost.

Determining Currency Value

Tracking the development of the cryptocurrency market is one method to test cryptocurrency as an individual asset. Part of this process is constructing a cryptocurrency index. According to Ankenbrand (2017), the index can be used to assess the characteristics of cryptocurrencies as a new asset class. The construction of the cryptocurrency index used the

Laspeyres approach. Etienne Laspeyres (1834-1913), a professor of economics, statistics, and law, is best known for creating the index number formula (Drechsler, 2000) that uses a group of commodities purchased in a base period as the basis for comparison. The Laspeyres approach weights the prices of the cryptocurrencies with the corresponding share on their aggregated market capitalization (Janssen & Rudolph, 1992). Buhler (2017) stated that the market capitalization of a cryptocurrency is calculated by the price of a coin multiplied by the number of crypto coins in existence.

Bech et al. (2018) believed that going forward, cryptocurrencies will likely further disrupt existing business and finance models. Chesbrough (2007) stated that an improved business model frequently will beat a new technology. This may not be the case with cryptocurrency. Cryptocurrency will influence business and finance models, debt models, and banking models. One of the main finances and debt models that may be affected is the Fractional Banking Model. Fractional banking is the system that requires the bank only to hold a portion of the money deposited.

International Monetary Fund (IMF) head Lagarde (2017) claimed that cryptocurrency is not a passing fad but a genuine innovation in money. In Lagarde's 2017 speech at the Bank of England conference (2017), she declared people will start to keep balances on electronic wallets, with the remaining balances in mutual funds and investments in peer to peer lending platforms. Garret (2017) defined peer to peer lending as a new method of debt financing that allows individuals to borrow and loan money without using a bank. Peer to peer lending will challenge traditional debt models. If Lagarde is correct, there will be fewer deposits into financial institutions, and fractional banking may become a thing of the past. Tucker (2017) questioned if banks would still exist with the growth of cryptocurrency. Tucker (2017) described the three

purposes of banking that may no longer exist. They are safe storage of money, loan function, and a clearing system (settling transactions and certifying payments have been kept). If Lagarde is accurate, cryptocurrency will cause changes to business and finance models.

Frankenfield (2019) calculated the combined net worth of all cryptocurrencies is close to \$100 billion. According to the World Bank, this is equal to Morocco's (60th largest economy in the world) current GDP. Hunter and Kerr (2015), two economists at California State Polytechnic University, completed an analysis of bitcoin transactions for actual goods and services between 2012 and 2014 and found it approximately \$56 billion, placing it between Costa Rica and Tanzania in terms of household spending. According to Mark Carney, Financial Stability Board Chair (2018), crypto assets made up less than 1% of global GDP in 2017. According to Suberg (2019), the Bank of England has declared that if they created their own cryptocurrency, it would generate a 3% growth in GDP. Chandler (2019) pointed out a trend with countries that have struggling economies and a declining GDP. Chandler (2019) identified citizens from countries like Venezuela, Turkey, Iran, Nigeria, and India, that are facing economic and inflationary pressures, are turning to cryptocurrency to store their money. According to Coin Dance Data, these countries have experienced growth in cryptocurrency trading using their countries currency.

Developing a Global Currency

According to Rzayeva (2019), some experts consider cryptocurrency as the future global currency. Jacobs (2018) pointed out that the potential benefits of a global currency have been considered for decades. Mundell (2005) recapped that US President Franklin D. Roosevelt directed Secretary of Treasury, Henry Morgenthau Jr., to develop plans for a global currency.

Jacobs (2018) conveyed the question remains if cryptocurrency has the potential to play a role in the global financial system and what type of regulatory agency would be required to regulate it.

Lansky (2018) created a simple classification method to classify individual countries stance on cryptocurrency. Lansky (2018) came up with six levels (0-6). Hansen (2016) along with the Library of Congress tracks on an ongoing basis, the individual countries current position on cryptocurrency

Level 0: Ignoring. Countries that are ignoring or not dealing with the existence cryptocurrency. Currently, there are approximately 150 countries at this level.

Level 1: Monitoring. These countries have acknowledged the existence of cryptocurrency and have decided to deal with them in the future. These same countries have not taken an active role in developing a plan towards cryptocurrency. Currently, this level consists of Croatia, Ireland, and Japan.

Level 2: Recommendation. Countries in this level have recognized cryptocurrency exists and have recommended an approach to cryptocurrency. Most of the recommendations by these countries have been negative. Out of this level, 25 countries have issued warnings against the risks of cryptocurrency (Hansen 2016). The European Banking Authority (2014) released a statement claiming cryptocurrency is suited for micro-transactions, international payments, and currency for countries with unstable currencies.

Level 3: Guidance. This level is made up of countries that have issued guidance on methods to govern and regulate cryptocurrency. This level has claimed cryptocurrency shall be subject to the same regulations as anti-money laundering laws (Lansky 2018). Hansen (2016) counts five countries, Argentina, Czech Republic, Canada, Singapore, and the US, as basic members of this level, other countries are also included in this level but have added specific

directives to the basic guidance of the others. Dostov and Shust (2014) cited that the nature of cryptocurrencies makes the application of anti-money laundering challenges. According to Perez (2015), Switzerland has taken it a step further, and declared cryptocurrencies cannot be subject to value-added tax (VAT), but Hong Kong and the United Kingdom believe cryptocurrencies ought to be subject to value-added tax (VAT). Australia, Bulgaria, Canada, Estonia, Germany, Norway, Singapore, and the US are considering cryptocurrency “sort of an asset” and are pursuing tax legislation applicable to assets. Poland and Slovenia have ruled mining is subject to income tax, and Spain has declared cryptocurrencies are subject to gambling tax.

Level 4: Regulation. These countries are developing predefined conditions before cryptocurrency related services are authorized. There are only two countries in this level, the USA (New Jersey and New York only) and Luxembourg.

Level 5: Ban. According to Yanez (2015), Ecuador, Venezuela, and the Isle of Man have banned cryptocurrency and are preparing to make their own cryptocurrency. China, Iran, Colombia, Iceland, Lithuania, Lesotho, and Jordan have banned all banking institutions from using and accepting cryptocurrency. Algeria, Morocco, Nepal, Pakistan, Vietnam, Bangladesh, Bolivia, Kyrgyzstan, Russia, and Thailand have a complete ban on cryptocurrency. Qatar and Bahrain have banned cryptocurrency within their country but allow their citizens to engage in cryptocurrency activities outside their country.

Lansky (2018) believed introducing a national currency, either creating a new one or adopting an existing one, might significantly reduce risks associated with cryptocurrency. According to the Law Library of Congress (2018) although all forms are known as cryptocurrency and use the same type of technology, the terms countries use to refer to cryptocurrency are different, digital currency (Argentina, Thailand, Australia), virtual

commodity (Canada, China, Taiwan), crypto-token (Germany), payment token (Switzerland), cyber currency (Italy and Lebanon), electronic currency (Colombia), and virtual asset (Honduras and Mexico). Rzayeva (2019) further pointed out that Sweden and Norway have announced a complete rejection of cash circulation in the future.

Currently, there is no single strategy for the development of cryptocurrency for the world. However, Rzayeva (2019) believed that an electronic money system should be under the control of financial regulators. Jacobs (2018) stated that effective management of a global cryptocurrency could be achieved by an international organization that promotes a global economy rather than one that represents the interest of sovereign nations looking for an advantage.

Discussion of Relationships Between Concepts

The three concepts used in this research study provide knowledge and evidence that cryptocurrency meets the requirements to be an independent asset class. Cryptocurrency needs to fulfill the seven requirements based on Markowitz et al. (2017) definition, to be considered an individual asset. In addition to researching that cryptocurrency meets these requirements, the Laspeyres Index tracked the development of the cryptocurrency market. The Laspeyres Index aided in the construction of a cryptocurrency index. This index helped in the assessment of cryptocurrency as an individual asset. Researching the global approach to cryptocurrency determined whether cryptocurrency can be a global currency or asset. The first concept researched and assessed if cryptocurrency met the requirements to be considered an independent asset class, while concept two tracked the development of the cryptocurrency market. The third concept researched how big and global cryptocurrency can get and if it is possible for governments to regulate it.

Summary of the Conceptual Framework

Conceptual framework is a guide to assist the researcher to stay organized. According to Evans et al. (2011), because this is an exploratory study, collection of extensive qualitative data over time is emphasized. Accumulating data from interviews took time and was not something that could be rushed. Conceptual framework assisted the researcher in organizing the answers to the research questions. Jabareen (2009) stated that conceptual frameworks can be developed through the qualitative analysis process. Miles and Huberman (1994) claimed that conceptual framework lays out the key factors and variables, then assumes relationships among them.

Definition of Terms

The following uncommon terms are used throughout this qualitative study. The definition for these terms is provided below.

Blockchain: Blockchain (distributed ledger technology), as defined by Swan (2015), is a network of software protocol that allows transfer of money, assets, and data securely across the internet.

Cryptocurrency: Milutinovic (2018) defined cryptocurrency as a form of digital money that uses blockchain technology and cryptography to protect the information about transactions and exchanges made on the digital market.

Cryptography: Milutinovic (2018) defined cryptography as the process that translates legible information into codes that cannot be broken at all.

Extractive institution: Mizuno et al. (2016) defined extractive institutions as institutions where the ruler can extract a large share of citizens' wealth. Acemoglu and Robinson (2012) claimed that extractive institutions remove the majority of the population, based on income, from participating in political or economic affairs.

Fiat money: Jamali et al. (2016) defined fiat, Latin for “it shall be,” is money not backed by a physical commodity. The dollar is an example of fiat money.

Miner: Nakamoto (2008) explained there are many people from the general public called miners that use their computers for validation and timestamping these transactions as they add them to the ledger while using a timestamping scheme. These miners get paid in cryptocurrencies.

Token: Tokens represent a particular asset or utility and can represent any assets that are tradeable (Zainuddin, 2017).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions made in this qualitative research study include the accuracy of the limited works available. The research is current, but on an ever-changing topic. There are no cryptocurrency experts or no single cryptocurrency definitions. The works used for this research were from educated individuals that researched a relatively new topic. With the rapid changes in the cryptocurrency topic, the information available is also changing.

Limitations

Cryptocurrency is a new technology with a limited amount of research behind it. A significant amount of the current researchers points out the lack of research done on this topic. This poses challenges for research and especially for peer-reviewed works. Rzayeva (2019) said that currently there is no single strategy for the development of cryptocurrency in the world. Researching regulation is another limitation. When it pertains to regulation, the lack of global uniformity amongst countries and among international financial institutions makes regulatory research challenging. Some countries want to ban it, and some countries want to embrace it. For

asset classification, there is no consensus on what cryptocurrency is, including an asset, money, property, and investment. There are various opinions on cryptocurrency, but not one popular opinion that everyone will streamline behind.

Delimitations

This study is about cryptocurrency as an individual asset and regulation of cryptocurrency. Detailed quantitative cryptocurrency performance as an investment, as property, as an asset is not in this study. Data about the organizations and terrorist groups that are funded are allegedly by cryptocurrency were not included in this research. This study was based on the characteristics of cryptocurrency that warrant a separate asset class and how classifying cryptocurrency will help governments regulate it. Also, not in this study is extensive research on the benefits of blockchain. Since the beginning of cryptocurrency, multiple cryptocurrencies have been developed, and this research was not included in this study.

Significance of the Study

Bianchi (2017) pointed out a there is a lack of empirical works investigating cryptocurrencies' asset classification. Based on Bianchi's inference, the significance of this study is to address the inability to determine an asset class for cryptocurrency further resulting in governments' inability to regulate it. Krueckberg and Scholz (2018) found that cryptocurrencies qualify as a distinct asset class based on a lack of statistically significant correlation to traditional asset classes. In contrast, Bianchi (2017) pointed out there is no significant relationship between cryptocurrency and traditional asset classes and that cryptocurrencies cannot be considered a traditional asset class. Traditional asset classes include stocks, bonds, and equities. Jacobs (2018) declared that the rapid rate of development has raised regulatory concerns at the national and global level. Classifying cryptocurrency, will start the regulatory discussion. Krueckberg and

Scholz (2018) claimed that defining cryptocurrencies as an asset class will have an impact on regulatory treatment and future policy debate. This study needs to continue this significant work to classify cryptocurrency as an independent asset or as part of the existing asset classes.

Reduction of Gaps

This study will reduce the knowledge gap within cryptocurrency. By reducing the knowledge gap, there will be a better opportunity to understand the need for the classification of cryptocurrency. Furthermore, this study discovered the different characteristics that make up an independent asset class and compare those to the characteristics that make up cryptocurrency. When it comes to a separate asset class, Ankenbrand and Bieri (2018) stated there is currently no consensus affirming cryptocurrencies as an individual asset class or affirming cryptocurrencies share similarities to existing asset classes. Cryptocurrency as an asset that has received scant attention; regulating an obscure and enigmatic asset poses more significant challenges than well-established asset classes (Low & Teo, 2017).

Implications for Biblical Integration

Cryptocurrency has permeated the finance and banking industry as well as the retail industry. Other industries have started to flirt with the use of cryptocurrency, including the church. The use of cryptocurrency has reached churches around the world, but Netzly (2018) declared the primary motivation is greed. Following up on Netzly's statements, gambling and greed are very popular opinions when discussing the Bible and cryptocurrency. In contrast to those opinions, Lawlor (2018) advised Christians to get involved with cryptocurrency because government money is a sin. The Bible does not speak to cryptocurrency precisely because of the newness of the term, but comparisons can be made to the bible's mentions of money.

In Denmark, church collection boxes now accept mobile payments. Besides Denmark, ICF Zurich (Evangelical Focus, 2018), one of the biggest churches in Switzerland accepts bitcoin and other alternate cryptocurrencies like bitcoin cash, ethereum, and ripple. The church has many young people that use this method to do their financial transfers, so the church has found a way to connect to their younger parishioners. Soriano (2018) claimed economist Jorge Sagar, a member of the Spanish group Evangelicals in Economy and Business, stated Bitcoin has to be an instrument of justice and insists on leaving behind any moral connotation.

Bentley (2017) from the Christian Post likened buying cryptocurrency to gambling. Bentley (2017) considered the purchase of bitcoin as a wager instead of an investment. Bentley (2017) recapped the Bible warns against any actions of greed, “Those who desire to be rich fall into temptation, into a snare, into many senseless and harmful desires that plunge people into ruin and destruction” (1 Timothy 6:9 ESV).

The Mark of the Beast is a common sentiment when researching cryptocurrency, specifically bitcoin. Hrenchir (2015) stated that bitcoin could become the Mark of the Beast mentioned in the New Testament’s Book of Revelation. Hrenchir (2015) continued to explain the Mark of the Beast is one of the characteristics of the tribulation years, and some believe Bitcoin is in position to fulfill the prophecy of becoming the one-world currency the anti-Christ will use to gain economic control of the world. “And he causes all, both small and great, rich and poor, free and bond, to receive a mark in their right hand, or in their foreheads: and that no man buy or sell, save he that had the mark, or the name of the beast, or the number of his name” (The Book of Revelation 13:16-17). Cryptocurrency has reached the church and members of different religious organizations have formed opinions their opinions over the use of cryptocurrency. The

church, like the finance and banking industry will need to continue to do their own research on the advantages and disadvantages of cryptocurrency.

Relationship to Field of Study

The researcher's doctorate cognate is finance. Cryptocurrency continues to rise and become more popular. Cryptocurrency is no longer just an investment but is now used as a form of payment of products and services. Banks and financial institutions can no longer ignore cryptocurrency as a passing fad. Now, banks and other financial institutions have to decide how they will handle customers, investors, and internal voices calling for increased institutional investment in blockchain assets (Draglet, 2018).

Banking needs to research and understand the way cryptocurrency works and how their institutions can better service their cryptocurrency customers. For every person that believes cryptocurrencies are in a bubble, there is someone else claiming cryptocurrency is the future wave of the democratization of finance (Mazer, 2018).

Summary of the Significance of the Study

US Senator Thomas Carper commented at the first ever Congressional hearing on bitcoin that "cryptocurrency has stimulated the imagination of some, struck fear in others, and confused the heck out of everyone else" (Homeland Security & Governmental Affairs full committee hearing, 2013, para. 3). This is partly due to the topic of cryptocurrency being relatively new and lacking a great amount of research. Stratiev (2018) declared the regulation of cryptocurrencies is in a state of legal inertia. Stratiev attributed this to a lack of understanding by the government and the potential for the regulations to be obsolete by the time it is released. The absence of regulation is partly due to a lack of research and partly due to the inability to classify cryptocurrency as an independent asset.

A Review of the Professional and Academic Literature

The researcher investigated the characteristics that make up different asset classes in an effort to show the need for a separate asset class for cryptocurrency. This qualitative study will aid in consensus on the potential need for cryptocurrency as a separate asset class and outline the reasons cryptocurrency may not belong in current traditional asset classes. This study discussed the current asset classifications and the requirements to be considered an asset.

This qualitative study defined cryptocurrency and intentions behind cryptocurrency's creation. There has been confusion and a lack of consensus on exactly how to classify cryptocurrency. Some of the confusion and lack of consensus has been over what asset class cryptocurrency falls under or the bold notion that cryptocurrency is its own asset class. The ability to regulate cryptocurrency depends on this classification. This study researched classification and regulation domestically and globally.

Cryptocurrency

The history and attributes of currency have evolved over time. Different physical materials and attributes have been used to represent currency. Cryptocurrency is the next stage in the history of currency. The physical make up or lack of physical presence of cryptocurrency is different but the attributes are similar.

History

Currency has evolved throughout time, but the need for currency has never wavered. Even as currency has taken different forms, its role as a staple in society has been constant. Forstater (2005) imparted that historically money originated in the Mesopotamian Temples as weight and was responsible for the growth of internal accounting by using debits and credits. Beattie (2015) stated the first metal coins were Asian Cutlery around 100 BC and became round

shape to fit in pockets and bags easily. Tcherneva (2005) identified cowries, Fijian, whales' teeth, yap stones, wampum, cattle, and metallic currencies as the earliest forms of money. The first minted coin was created in Lydia (Western Anatolia) around 7th Century BC (Davies, 2002). Bhatt (2014) reminded that in early civilization, the barter system provided an open market and a fair exchange of goods. According to Von Mises (1953), that system could not scale up, and currencies in various denominations were needed. Scaling led to economic activity, and soon, banks emerged. Bhatt (2014) stated in the early days, banks could even make their own currencies to establish their dominance over other banks. Eventually, Mandeng (2018) pointed out countries developed their own central banks to determine value of money and regulate banknotes.

In 1957, Rand wrote:

Money is a tool of exchange, which cannot exist unless there are goods produced and men able to produce them. Money is the material shape of the principle that men who wish to deal with one another must deal by trade and give value for value.....Money is made possible only by the men who produce. (p. 380)

Lovell (2016) wrote that Rand had no idea she was describing cryptocurrency, where consumers trade value for value based on the work performed by people producing electronic currency. Akinyemi et al. (2015) described three eras of money and business transactions: pre-paper consisting of animal bones, clay, papyrus, bullae, charcoal sticks, plant stems, feathers; paper consisting of ledgers, journals, and cashbooks; and electronic which used computers. Zheng et al. (2017) stated that cryptocurrency may be the fourth era of money and business transactions. The world is developing at immense speed. The world of finance is no exception.

One of the most influential economists in history, Keynes (1930) defined bank money, or incorporeal money is money held in a bank, that once held in the bank becomes a debt owed to the bank customer. Low and Teo (2017) explained that cryptocurrency is different from bank money in that bank money is derived from fiat currency and takes the form of a debt claim with the debtor being the bank. Jeffries (2013) pointed out that if someone owns bitcoin, they own a private cryptographic key and that unlocks a specific address. Trautman (2014) exclaimed cryptocurrency has sparked much regulatory attention, with most of the legal analysis focused on regulation and less attention on ownership. Low and Teo (2017) asserted that cryptocurrency cannot take the role of debt because, without the third party, no one can take the role of the debtor.

Attributes

Coins and paper money are still prominent forms of currency; according to Mulhere (2016), virtual currency has emerged as technology continues to advance. Prasad (2018) defined currency as a legal tender that is accepted as a unit of account, a store of value, and a medium of exchange. Castronova (2015) reminded that the shape of money and the usages have changed entirely over centuries but the purpose as a medium of exchange and storage of value have not changed. Davies (2002) stated whatever shape or substance that is chosen to represent money should have these features:

- Cognizability: clearly identified and recognizable
- Utility: the substance that it is made of, should be usable for other purposes
- Divisibility: can be divided into smaller amounts
- Portability: concentrated enough to be carried and transferred
- Indestructability: it does not deteriorate or diminish over time

- Homogeneity: fragments of same size and shape have the same value.

Asset Classification

Chartered Professional Accountants (CPA) (2018), an organization in Canada, defined an asset as a present economic resource controlled by the entity as a result of past events. Presuming the definition is met, determining how to account for the asset as cash, an intangible asset, or property. International Accounting Standard 32 (IASB, 2003) states currency (cash) is a financial asset because it represents the medium of exchange. Currency (including foreign currency) is generally accounted for as cash. International Accounting Standard 40.5 (IASB, 2003) defines investment property as property (land or a building – or part of a building – or both) held (by the owner or by the lessee under a finance lease) to earn rentals or for capital appreciation or both. International Accounting Standard 38.8 (IASB, 2004) defines an intangible asset as an identifiable non-monetary asset without physical substance.

The first step in that decision-making process is to define what an asset class is. Markowitz et al. (2017) defined an asset class as a stable aggregation of investable units that is internally homogeneous and externally heterogeneous. When added to a portfolio, the investable unit raises its expected utility without the benefit of selection skill and can be accessed cost-effectively in size. Robert Greer (1997) defined an asset class, as a set of assets that have economic resemblances with the other assets in the asset class and bear characteristics that make them different from other assets.

Burniske and White (2017) derived four characteristics that make up an asset class: investability, politico-economic features, correlation of returns price independence, and risk-reward profile. Burniske and White defined an asset class similar to Markowitz. These characteristics will be part of the research in this study. Greer (1997) also stated below the

superclasses are regular classes that also have subclasses. These subclasses break down the superclass into categories. Greer (1997) broke down asset classes into super asset classes; capital asset class like a stock or bond, consumable asset class, and store of value asset class like fine art. Maginn et al. (2007) defined the most commonly used asset classes like equity, fixed income, commodities, real estate, hedge funds, and private equity.

Burniske and Tatar (2018) identified the economic characteristics of an asset class with four criteria; how are they governed, what is the supply schedule, how are they used, and what is the basis of value. The question how they are governed refers to how the procurers, the asset holders, and the regulatory body govern them. The question of what the supply schedule is referring to the IPOs or in the case of cryptocurrency, the ICOs initial release, and subsequent releases. The question how they are used refers to what is being done with them, for example, raising capital or currency.

Cryptocurrency

A person or persons, with the pseudonym Satoshi Nakamoto (2008), whom will be referred to as Satoshi for the rest of this paper, wrote a white paper about advancements in fintech, one of these advancements is cryptocurrency. Satoshi (2008) wrote about trust and commerce on the internet, relying almost exclusively on financial institutions serving as trusted third parties to process electronic payments. Satoshi (2008) elaborated the system works well enough to support most transactions, but it is still a weak trust-based model.

Developments in technology started in the 1980s with Chaum (1981) researching anonymous communication. Anonymous communication would be part of Satoshi's inspiration for cryptocurrency. Soon after Chaum's research, the first digital currency, "DigiCash" was created in 1990 (Phillip et al., 2018), and offered anonymity via cryptographic protocols. Satoshi

(2008) resurrected Chaum's (1981) philosophies and added peer to peer networking. Wei (1998) created something very similar to cryptocurrency called "b-money" that represented an electronic cash system that was anonymous.

Milutinovic (2018) confirmed that Satoshi's idea was to create a digital cash system that worked on a peer to peer network principle, and that is how it became cryptocurrency. Some thoughts on the lack of trust with banks and corporations led to Satoshi developing a different way to conduct business transactions. Satoshi's idea was that business transactions would no longer rely on banks or other financial institutions to be the trusted intermediaries. In the initial creation of cryptocurrency like technology, the central theme was anonymity. Dierksmeier and Seele (2016) emphasized that cryptocurrency allows anonymous transactions between the two parties, and each party does not know the identity of the other. Remaining anonymous seemed to be the main focus of early research into cryptocurrency. Szabo (2015) invented "Bit Gold," which was the technological platform on which Bitcoin is based. Milutinovic (2018) asserted "bit Gold" represented a mechanism for decentralized digital currency but was never entirely accepted or implemented.

Milutinovic (2018) defined cryptocurrency as a form of digital money that uses blockchain technology and cryptography to protect the information about transactions and exchanges made on the digital market. Dourado and Brito (2014) defined cryptocurrency as a currency system that uses cryptography to securely transfer and exchange digital tokens in a decentralized manner. Milutinovic (2018) stated that cryptocurrency represents digital money that is not physical in presence that an individual cannot see or feel.

Chuen (2015) explained that cryptocurrency has four benefits relative to cash and standard transaction services that warrant its creation; cheap payment methods, trustless,

decentralized, and pseudonymous. Murphy (2015) claimed that cryptocurrency is more affordable when it comes to transaction fees because there is no middleman or a third party to charge the fees. According to Krol (2014), Bill Gates found Bitcoin exciting because it shows how cheap transferring funds from one place to another can be.

Satoshi (2008) designed cryptocurrency to provide the trust that customers were looking for after the financial crisis. Tapscott and Tapscott (2016) pointed out that trust in business is the expectation that each party will behave along with the four principles of integrity; they are honesty, consideration, accountability, and transparency. Trustless is one of the traits of cryptocurrency. According to Antonopoulos (2014), no one is trusted, no one needs to be trusted, and there is no central authority. Cryptocurrency removes the need for a trusted third party or intermediary.

Decentralization, according to Blocke (2017), makes cryptocurrencies less likely to fail due to the lack of oversight and control. Cuccuru (2017) said decentralization ensures transparency because there is no single entity that is in control of the infrastructure and can manipulate the system. The fourth benefit of cryptocurrency is pseudonymous. Franco (2015) informed that all the user transactions are publicly visible and identified by the Bitcoin address, which serves as a pseudonym. This benefit may be the most attractive since Hempel and Lammerant (2015) stated misuse of personal data is prevalent by governments and big corporations.

Cryptocurrencies are different from fiat currency. Bech and Garrat (2017) claimed there are three characteristics that distinguish cryptocurrencies from fiat currency; they are electronic, not a liability for anyone, and feature peer to peer exchange. Athey et al. (2013) informed that

people are becoming bigger fans of cryptocurrencies than the standard currencies that are issued by the government.

Burniske and Tatar (2018) informed that in 2008, Bitcoin rose like a phoenix from the Wall Street ashes. The Federal Reserve Bank of St Louis (n.d.) provided a timeline of the connection between the financial crisis and the creation of Bitcoin. From August to October of 2008, a series of changes occurred that connect the creation of Bitcoin with the financial crisis: Bitcoin.org was established, Lehman Brothers filed for bankruptcy, Bank of America bought Merrill Lynch, the United States Government established \$700 billion Troubled Asset Relief Program (TARP), and Satoshi published a white paper that founded Bitcoin.

The financial crisis, according to a report released by the United States Government Accountability Office (GAO; 2013) cost the global economy trillions of dollars and destroyed the trust between the public and financial institutions. Burniske and Tatar (2018) wrote that at the same time the financial crisis was occurring, Bitcoin was created to provide a system that did not rely on human ethics but on computer calculations. Satoshi (2008) wrote that he had created a system for electronic transactions without the need for trust. Spithoven (2019) wrote disabling government layers should allow for smooth business cycles and money should not be an instrument of monetary policy.

Elliott (2009) stated Satoshi launched the code for Bitcoin in 2009; Satoshi attached a message calling out the United Kingdom Chancellor during the financial crisis. Shteyngart (2018) told us hedge fund billionaire Michael Novogratz believes cryptocurrency was a direct result of the financial crisis when people lost faith in banks. Tapscott and Tapscott (2016) said the financial crisis was a breakdown of trust and say Satoshi's new technology will change everything and fix all the problems. Casey and Vigna (2018) asserted the government only

brought old order back after the financial crisis, but the real problem was a failure of trust that still exists and blockchain will fix it.

Goldberg (2005) defined fiat money as a currency without intrinsic value that was recognized as money by the government. Fiat money, like the dollar, only has value because the government maintains the value. Mankiw (2014) stated that money without intrinsic value is called fiat money. Montgomery (1917) defined fiat money as any money the government declares a legal tender. Mankiw (2014) further stated a fiat is an order or decree, and fiat money is created as money by a government decree. The difference between fiat money and cryptocurrency, according to Lovell (2019) is that the valuation of cryptocurrency can fluctuate rapidly. Lovell (2019) used the example of February 2018, when a single bitcoin value was \$8,253.91, and 10 days later, it was \$9,370.49. More recently during a week in July 2019, bitcoin fluctuated from \$10,638.36 to \$9,387.44. There are three ideas about cryptocurrency and fiat currency; cryptocurrency replaces fiat currency, cryptocurrencies exist with fiat cryptocurrency, and a digital fiat currency is created.

Fernandez-Villaverde and Sanches (2018) pointed out that cryptocurrency may not replace all fiat currency but has the potential to replace bad fiat currency in countries where inflation is exceptionally high. An example of one of these countries is Venezuela. Kirby (2018) pointed out inflation in their fiat currency (the Bolivar) is forecasted to exceed 10,000%. Kirby (2018) stated that a government-issued digital fiat currency would be a dominant currency if the government could control inflation. Whether this government-issued digital fiat currency could coexist with fiat currency would depend on the regulations the government could implement. Beyond the use of cryptocurrency, Kirby (2018) mentioned that the decreasing use of cash has countries considering a digital fiat currency.

There has been some confusion between electronic money and digital currency. Lansky (2018) defined electronic money as a digital equivalent to cash that is stored on an electrical device until needed for the payment. Digital currency is an electronically issued currency that, according to Lansky (2018), may or may not be transferred into fiat currency. The main difference according to Lansky (2018) is the electronic money is equivalent to cash and may be used as cash where digital currency may or may not be used as cash. Cryptocurrencies are decentralized digital currencies. The world's first cryptocurrency bitcoin was first described in a white paper by Satoshi (2008). The cryptocurrency described in Satoshi's white paper can be better understood by breaking down the cryptocurrency ecosystem.

Ecosystems

To understand the need for a separate asset class for cryptocurrency, there must be an understanding of the cryptocurrency ecosystem. A cryptocurrency ecosystem is a map of the cryptocurrency infrastructure. Cryptocurrency ecosystems are made up of the initiators, coders, programmers, miners, middlemen, customers, the media, and the governments.

- The initiators are the organizations behind cryptocurrency. They provide platforms and start internet communities. The initiators have the ideas on developing a platform that would interest a community that would soon take ownership. Halpern (2018) stated the code is open source and other coders have access to propose changes to the software.
- Spithoven (2019) explained the coders write the basic code for the ledger, including the transaction rules, the protocols, attributes, and the consensus mechanisms.
- Abramowicz (2016) asserted that the programmers coordinate the protocols. They regulate cryptocurrency like bitcoin and maybe volunteers using the free software.

- Halpern (2018) stated miners provide network security through proof of work or proof of stake. The miners solve math problems and create a new block. The new block allows for the creation of cryptocurrency. The miners are paid with cryptocurrency.
- The middlemen are the wallets and exchanges. Cryptocurrency currently needs intermediaries to provide processing and financial systems. The goal of cryptocurrency is to get rid of the middlemen. Bohme et al. (2015) stated the middlemen are potential problems because exchanges may fail or wallet providers may steal the cryptocurrency.
- Spithoven (2019) explained customers feed the cryptocurrency network. Customers determine the demand for specific cryptocurrencies. Their behaviors, transactions, and risks shape the cryptocurrency market.
- The media has the power to direct the cryptocurrency discussions. Papadopoulos (2015) stated the media can focus on the irregularities of cryptocurrency and distract the public from the benefits of cryptocurrency and blockchain. The media's influence affects price volatility.
- Cryptocurrency followers believe the public ledgers make regulating agencies obsolete. Papadopoulos (2015) believed cryptocurrency will transform the government monetary system as a whole. Hughes (2017) stated the government's regulatory focus should be on the middlemen. The government should force the middlemen to register with the Financial Crimes Enforcement Network or the Commodity Futures Trading Commission, and adhere to the reporting requirements of the Bank Security Act for money transmissions (Hughes, 2017).

Bitcoin

According to Phillip et al. (2018), the most popular cryptocurrency and the largest by market capitalization is bitcoin. Franco (2015) pointed out that Bitcoin is basically a computer program, not controlled by a central bank or any authority. Hughes and Middlebrook (2015) defined the term Bitcoin as both virtual currency and the payment system that operates as a peer-to-peer network of transactions. Hughes and Middlebrook (2015) asserted Bitcoin functions as virtual currency that serves as a medium of exchange that exists in intangible form and acts as a substitute for a legal tender. Milutinovic (2018) explained that Bitcoin does not have a centralized system; no one controls Bitcoin like in traditional banking systems that issue currency and print money.

Satoshi (2008) envisioned Bitcoin as an electronic payment system based on cryptographic proof instead of trust that allowed only two willing parties to transact with each other without the need for a trusted third party. Bitcoin uses cryptography to gather information and data, then passes it through a distributed ledger called Blockchain. For this system to work, Satoshi (2008) explained there are many people from the general public called miners that use their computers for validation and timestamping these transactions as they add them to the public ledger (Blockchain) while using a timestamping scheme. These miners get paid in cryptocurrencies. Shriver (2018) asserted that bitcoin is limited in quantity, functioning more like precious metals than money. Producing a single bitcoin, declared Shriver (2018), requires a large amount of computing power and increases with each bitcoin produced.

Antonopoulos (2017) explained to transfer the bitcoins, each person needs to have a digital wallet. The digital wallet is where the bitcoins will be stored until transferred. Franco (2015) stated each wallet has an address that has no personal information the individuals use to

transfer bitcoin. The part that is secret is the private key that is needed to access the wallet to transfer bitcoins (Narayanan et al., 2016).

Low and Teo (2017) explained the person with the bitcoins has a public Bitcoin address and private cryptographic key. The Bitcoin address is like a bank account number and similar to bank accounts; a person can have more than one Bitcoin address. The private cryptographic key serves like a password, but Low and Teo (2017) pointed out that unlike a password, the cryptography key cannot be changed and is linked to that specific Bitcoin address. To do any cryptocurrency transaction, the holder must have the cryptographic key and Bitcoin address. Popper (2015) proclaimed the first real purchase using bitcoin was to order a pizza. Goldstein (2013) declared the actual first transaction using bitcoin was done on the black-market website called Silk Road to ensure anonymity because credit cards and PayPal were not allowed. Satoshi (2008) wrote about using a public distributed ledger. The public ledger for bitcoin is blockchain.

Since the creation of Bitcoin, other cryptocurrency have popped up. Orr and Lancaster (2018) described the term altcoin as alternatives to bitcoin. Gamerverda (2018) stated between 2013 and 2014, altcoin grew five times from \$100 million to \$500 million. CoinMarketCap (2018) revealed that as of April 2018, there were 1,596 different cryptocurrencies in circulation.

Blockchain

Blockchain (distributed ledger technology), as defined by Swan (2015), is a network of software protocol that enables the secure transfer of money, assets, and information across the internet. Lewis (2017) explained that each blockchain is encrypted and logs information into smaller datasets called “blocks.” Elaborating on Lewis’ (2017) explanation, Xie (2019) asserted that each block contains information about specific transactions, information about the previous block, and finally a verification process. Bonneau (2015) explained the verification process

employs mathematical puzzles and coding that are the proof of work that validates the information stored in the block. These mathematical puzzles are solved by the miners. Lovell (2016) stated this part of the system was intentionally designed by Satoshi to avoid outside regulation from a central bank. Swan (2015) stated the transactions are validated, executed, and recorded chronologically in an append-only tamper-resistant database, where they remain available on the internet for an on-demand lookup and verification. Xie (2019) summarized that because each transaction is encrypted and then verified, blockchain technology makes these transactions irreversible and the need for third-party verification unnecessary. Allowing transactions to be reversible allows for a payment to be rescinded, thus putting the merchants at risk. Currently or more commonly, financial institutions are providing third-party verification.

Blockchain and distributed ledger technology are used interchangeably. Halpern (2018) explained that public blockchains are used to stop fraud and to bypass extractive external institutions. Acemoglu and Robinson (2012) explained that extractive institutions favor the elite and remove the majority of the population from political and economic affairs. Extractive institutions are usually responsible for stagnant growth. Swan (2015) explained the four features of a distributed ledger: a shared transaction database, it is updated by consensus, records are timestamped with a unique cryptographic signature and tamper-proof history of all transactions. These features are what draws people to use blockchain.

Since the creation and increased usage of bitcoin, several cryptocurrencies have been created. Huang et al. (2019) wrote about the increasing popularity of cryptocurrency bringing about a new way to raise money called initial coin offerings (ICOs). Bohme et al. (2015) defined initial coin offerings as a decentralized method of financing, where a firm asks for funding by issuing coins to online investors. Initial coin offerings (ICOs) have the same characteristics and

serve the same purpose as an initial public offering (IPOs). Gikay (2018) explained that after the mining has been completed, a team of developers create the blockchain for the new cryptocurrency and offers tokens for sale through Initial Coin Offerings (ICOs). In 2017, Sterling stated that there was a rash of initial coin offerings (ICOs) proposing a variety of new cryptocurrencies.

See Figure 1 for a visual of how cryptocurrency works. Figure 1 displays the chain of events from an individual requesting a transaction to the transaction broadcasting to the peer to peer network through validation to verification to creating a block to the new block being added to the blockchain to finalization.

Figure 1

How Cryptocurrency Works Source Sara Technologies

<https://www.saratechnologies.com/cryptocurrency-development>

Removed to comply with copyright.

Classification Scheme

Burniske and Tatar (2018) concluded cryptocurrency must fall into the consumable asset category because it is consumed digitally. Burnie et al. (2018) claimed the rise of cryptocurrency as a new *sui generis* creates the need for a new classification scheme. Burnie et al. (2018) developed a classification framework that provides a tool to assess cryptocurrency for the less technical public. The classification scheme is broken down into three groups: crypto-transaction, crypto-fuel, and crypto-voucher.

Burnie et al. (2018) asserted crypto transactions are cryptocurrencies that are used for transacting value or a form of electric cash. Crypto transactions are quicker and have fewer barriers to transact through. Crypto-transaction tokens were the first form of cryptocurrency. Examples of crypto-transaction tokens are bitcoin, ripple, dash, monero, kin, and qash.

Burnie et al. (2018) explained crypto fuel are cryptocurrencies that help developers create blockchain applications. These tokens help the blockchain platform operate. These blockchain platforms are normally used to support initial coin offerings (ICOs). Ethereum and Ecobit are two examples of crypto fuel.

Crypto vouchers are tokens that are considered a predefined asset. These tokens give the holder rights to something. For instance, according to Burnie et al. (2018) in Filecoin, the tokens are transferred to receive storage space. The value of the tokens varies based on the application. Some examples of crypto-voucher tokens are AirSwap, Filecoin, and Tether.

Mayer (2018) asserted various scholars have studied the return characteristics of cryptocurrency and declared it an asset class instead of digital currency. There is no general definition of an asset class and the specification of an asset class greatly differs in the financial world (Mayer, 2018). Without a general definition, Markowitz's individual asset class

requirements is used. According to Markowitz et al.'s (2017), the seven requirements for cryptocurrencies to be considered an individual asset class are stable aggregation, investable, internally homogeneous, externally heterogeneous, expected utility, selection skill, and cost-effective ease.

Stable aggregation is the first requirement of an individual asset class. Aggregation is bringing a group of things into a cluster. Stable aggregation means the cluster is steady. Latham and Watkins (2015) described cryptocurrency as a digital asset that functions like money. Following this, tokens represent a particular asset or utility, and can represent any assets that are tradeable (Zainuddin, 2017). Ankenbrand and Bieri (2018) stated that cryptographic tokens are different from established asset classes in terms of their purpose, cryptographic backbone, and decentralized governance. This means cryptographic tokens as an asset are relatively stable, checking the box of the first characteristic of an asset class.

The next characteristic states that cryptocurrency needs to be investable to qualify as an asset class. Burniske and White (2017) asserted that an asset class must be sufficiently investable, providing liquidity and opportunity to invest. This characteristic means investable to a broad range of investors. Currently, there are multiple ways to invest in cryptocurrency, but the main platform is digital exchanges. Mayer (2018) pointed out traditional asset classes can only be traded during core hours and on weekdays, while cryptocurrencies can be traded anytime. Hileman and Rauch (2017) classified the exchanges into three categories: one is known as an order-book exchange, the second is a service that acquires and sells cryptocurrencies at a given price, and the third is a service that connects directly to other platforms for trading. The number of exchanges continues to grow, offering investors more access to investing in cryptocurrency. Mayer (2018) concluded investing in cryptocurrency potentially provides large returns that come

with high volatility and a high level of risk compared to traditional asset classes. Because of this, investors should consider investing in cryptocurrency as an alternative asset class that has a different distinctive market unassociated with traditional asset classes.

Markowitz et al. (2017) defined internally homogeneous as all components of the asset class being similar to each other, and externally heterogeneous as each asset class should be different from the other asset classes. These are two more requirements for cryptocurrency to be considered an asset class. In practice, according to Jones (2012), asset class refers to a useful cluster of investable assets. Internally homogeneous would indicate the cluster of investable assets are similar to each other. In the case of externally heterogeneous, a cryptocurrency asset class would need to be different from the other asset classes.

Kinlaw et al. (2017) asserted that the addition of an asset class to a portfolio should increase the portfolio's return and lower the portfolio's risk. This is an expected utility, the fifth requirement for cryptocurrency to become an asset class. According to Burniske and Tatar (2018), the Sharpe Ratio created by Nobel Prize Winner William F. Sharpe can be used to examine the expected utility. The Sharpe ratio is a measure of returns per unit of risk taken (Burniske & White, 2017). Bodie et al. (2010) described the Sharpe ratio as a risk measure that calculates a ratio of an investment's risk premium relative to the investment's standard deviation.

The sixth requirement for cryptocurrency to become an asset class is selection skills. Ankenbrand and Bieri (2018) stated investors should be able to add this asset class to their portfolio without specific selection skills or advanced training. Without specific skills, the investor should be able to improve the return and diversity of their portfolio. Additionally, investors do not need to add specific cryptocurrencies to their portfolio nor do they need to

actively manage their portfolio because of the cryptocurrency addition (Ankenbrand & Bieri, 2018).

Cost-effective access, the seventh requirement for cryptocurrency to become an asset is investing in cryptocurrency needs to be at a reasonable cost. Reasonable cost includes low transaction fees and trading fees. Ankenbrand and Bieri (2018) asserted that bitcoin has had a continuous increase in trading volume, which narrows the bid-ask spread, and is comparable to the weighted spread of the S&P 500 stocks. Wu (2017) concluded the spreads in trading bitcoin can be assumed to be cost effective. A review of these seven asset class requirements will further verify the qualifications of cryptocurrency as a separate asset class.

Separate Asset Class

Bianchi (2017) pointed out that there is no significant relationship between cryptocurrency and traditional asset classes, and that cryptocurrencies cannot be considered a traditional asset class. Traditional asset classes include stocks, bonds, and equities. Burniske and Tatar (2018) asked how regulators can put new technology like cryptocurrency in a centuries-old category. Bauer (2018) stated that no consensus to date has been reached that finds a place within conventional asset classes for cryptocurrency. Charfeddine et al. (2019) stated that cryptocurrencies are establishing themselves as a new asset class due to their distinctive features. Kruckeberg and Scholz (2018) found a high correlation amongst the different cryptocurrencies but no correlation with traditional asset classes, leading to an argument for a separate asset class.

Charfeddine et al. (2019) said investors and portfolio managers are interested in the benefits a new cryptocurrency asset class can offer. Unlike traditional assets, Shahzad et al. (2019) asserted that cryptocurrencies are not dependent on conventional economic and financial variables. Based on Markowitz's Modern Portfolio Theory (Markowitz, 1952), investments

within a portfolio have a diversifying effect if the investments provide a low correlation. Low correlation within an investment portfolio means the makeup of that portfolio consists of investments from multiple markets, business types, and assets. The more diversified a portfolio is the lower the risk. Osterrieder et al. (2017) concluded that combining cryptocurrencies in a portfolio provides favorable diversification effects. Combining cryptocurrency as a separate asset class with traditional asset classes within a portfolio does have a positive impact on the overall risk of that portfolio. Mayer (2018) stated cryptocurrency provides more substantial and frequent returns compared to traditional asset classes. Elendner et al. (2016) concluded cryptocurrency can provide valuable contributions to portfolio allocation because of their large returns with high volatility and low correlations with each other and other standard assets.

Part of the evaluation process of assessing cryptocurrency as a separate asset class is developing a cryptocurrency index. Ankenbrand and Bieri (2018) explained the cryptocurrency index positions the cryptocurrency market with an existing market to evaluate how it performs. Buhler (2017) stated that the cryptocurrency index tracks the entire cryptocurrency market. The cryptocurrency index provides the precise direction of the market and asset class. Brentani (2004) stated that the index can be price-weighted or capitalization-weighted. Buhler (2017) pointed out that the risk associated with a cryptocurrency index is the extreme volatility and uncertainty from lack of or partial regulation.

Mayer (2018) believed there is interest in exploring relationships between different cryptocurrencies and other market metrics within its own asset class. A portfolio made up of the different cryptocurrencies is intriguing and could provide investors information an option for larger returns compared to traditional asset classes. Adding cryptocurrency to a portfolio increases the portfolio's diversification and reduces the portfolio's unique risk.

Canadian professional agency Chartered Professional Accountants (CPA) (2018) stated cryptocurrencies do not meet the definition of a cash equivalent, short term that is readily convertible to known amounts of cash because they are not short term and have significant short-term value changes. CPA (2018) specified cryptocurrencies may be held for capital appreciation but cryptocurrency does not meet the definition of investment property. However, CPA (2018) states cryptocurrency is likely to meet the standards to be defined as an intangible asset.

Regulation

Immediately after its creation, Bitcoin operated free from regulation and outside the traditional finance system (Tu & Meredith, 2015). According to Tu and Meredith (2015) as Bitcoin's popularity grew, so did the attention of legal and regulatory bodies. With the growing popularity of cryptocurrencies, regulators had to determine the risks of this decentralized currency and decide how or whether to regulate cryptocurrency. For cryptocurrencies, there were two paths to choose from: either seek regulation or compatibility with current regulations or else remain unregulated, potentially illegally operating underground (Ostbye, 2018). Regulation of cryptocurrency may be the biggest challenge in taking cryptocurrency mainstream. Current regulation has commenced, and different countries are at different stages of regulation consideration. The argument is whether the benefits of cryptocurrency are worth the effort needed to establish regulations for cryptocurrency.

Challenges of Regulation

The asset classification of cryptocurrency influences how cryptocurrency will be regulated. Burniske and Tatar (2018) pointed out that regulators are working on how to classify, at least some of the cryptocurrencies, but continue to do so through a lens of the past. Crafting regulation for any new technology is challenging. Cryptocurrency is not globally or even widely

accepted; therefore, committing resources to regulation may not be worth it in the eyes of some countries. Like the valuation fluctuation, according to McLeod (2014), there is a great deal of fluctuation in how the government will define cryptocurrency and how to regulate its use. Hughes and Middlebrook (2015) identified that no nation has moved towards regulating cryptocurrency transaction execution. Hacker and Thomale (2017) exclaimed that without a specific legal category for cryptocurrency, financial institutions and their customers will all treat cryptocurrency differently.

Middlebrook and Hughes (2014) outlined what the possible regulatory scheme for cryptocurrency is:

- None. Cryptocurrency will not be regulated.
- A distinctive cryptocurrency regulatory scheme. This would be challenging since the tendency of the government is to try to regulate new products with existing regulatory schemes.
- Cryptocurrency as money transmission. This may be the direction that is closest to following federal and state money transmitting requirements.
- Cryptocurrency as a bank product. Currently banks are not involved but will eventually have to change their reluctance to enter into cryptocurrency activities. The involvement of banks will have regulatory implications. The more stable cryptocurrency becomes, the more likely banks will become more involved.
- Cryptocurrency as multiple activities. Cryptocurrency regulation would vary based on the role of the participants. Modified regulation based on the transaction and the transactor.

Pacy (2014) argued that cryptocurrencies can be used for an exchange or goods and services which are characteristics of money, but there are arguments that cryptocurrency should

be considered a commodity. Consensus may be the number one challenge to regulation. Pacy (2014) continued to accuse regulators and scholars of trying to avoid treating cryptocurrency like money and try to define cryptocurrency as a new technology that fits into an existing regulatory framework. Hacker and Thomale (2017) went as far as saying avoiding calling cryptocurrency money is to avoid stricter state and federal regulation.

Zuluaga (2018) pointed out there is a growing concern that new cryptocurrency coin offerings from initial coin offerings are disguised as securities trying to operate outside of the law. The 1946 Supreme Court ruling in SEC vs Howey defined a security as a contract involving an investment of money in a common enterprise with the expectation of profits from the efforts of others. Terzo (2018) identified the SEC chairman recently acknowledged that bitcoin does not meet the current definition of a security. Brito (2017) stated Commissioner Brian Quintenz (CFTC) supports the idea that cryptocurrency are not securities but are commodities. Director of Corporation Finance at the SEC, Himan (2018) argued cryptocurrency is not a security in its current state. Zuluaga (2018) stated it is difficult to give cryptocurrency a security designation since they fail to meet the securities definition.

Current Regulation

Hughes and Middlebrook (2015) pointed out that the United States focus on cryptocurrency regulation, before 2014, was on tax collection deterrence of money laundering, economic sanction laws, unregistered securities offerings, and commodities transactions with cryptocurrencies as the underlying asset. The main focus recently within the United States government has been on cryptocurrency as property. The Treasury Department, according to Massad (2019), has issued a report on finances, fintech, and innovation that the Financial Stability Oversight Council has established a working group on digital assets and blockchain.

McLeod (2014) pointed out the Internal Revenue Service currently considers cryptocurrency property. Cohen (1954) defined property as the law's recognition of a holder's rights, excluding others from a resource, tangible or intangible. There is no physical bitcoin or cryptocurrency, so if they are to be considered property, they would be intangible property. Gray and Gray (1998) broke down the word property as meaning proper to a particular person. By concluding that cryptocurrency is not tangible property, debts, or obligations, it becomes hard to classify cryptocurrency as property.

Currently, there is a lack of control by any government raising concerns to the different governments around the world (CPIM 2015). Ali (2014) pointed at the risk associated with cryptocurrencies when institutions start including cryptocurrency in their balance sheets and portfolios. Zetzsche et al. (2017) argued that operators of the distributed ledgers are not outside of the law. Edwards et al. (2019) stated that the United States Securities and Exchange Commission (SEC) is gradually moving towards declaring tokens issued by Initial Coin Offerings (ICOs) as securities and eventually using the same regulation for current securities.

Bech and Garratt (2017) claimed the lack of consensus on how cryptocurrency is defined is muddling the regulation process. The United States internally has experienced regulation challenges. Salawu and Moloji (2018) listed the opinions of different agencies under the United States government; the Department of Treasury classified cryptocurrency in 2013 as a decentralized virtual currency, the Commodity Futures Trading Commission classified cryptocurrency in 2015 as a commodity, the Internal Revenue Service as a property in 2018, and the Supreme Court as a fund in 2018. About taxes, Kumar and Smith (2017) claimed that most countries are taxing cryptocurrencies as an asset instead of currency.

The Benefits of Regulation

Middlebrook and Hughes (2014) asserted that cryptocurrency has the potential to challenge government supervision of monetary policy by disrupting current payment systems and the avoidance of existing regulations. Currently, there is a lack of regulation protecting consumers and enforcement of redemptions. Emery (2016) stated that cryptocurrency is currently not controlled by a central bank but controlled by mathematics and cryptography. Bensinger (2015) ascertained regulation will provide legitimacy for future investors and financial institutions to get new products and services to their customers. Hughes and Middlebrook (2015) stated that failing to regulate may delay employment of the new technology by users. The production of revenue streams from this new technology depends on the growth of the user base. Expansion of financial institutional interest will potentially allow more customers to participate in the benefits of cryptocurrency technology. There are various approaches to justifying the regulation of cryptocurrency. Ostbye (2018) claimed an approach from an economic perspective, market failures that caused are by cryptocurrency would be alleviated potentially by regulation.

Hughes and Middlebrook (2015) claimed that regulation will reduce transaction costs by controlling allowable costs by financial institutions. The allowable costs charged by financial institutions will be more transparent and uniform, and hidden fees to pay for third party intermediaries will be eliminated. By establishing trust, entities can reduce costs to attract new customers. Satoshi (2009) designed cryptocurrency to compete and possibly replace banks; regulation potentially makes make the playing field equal with transparency and trust.

Payment systems, according to Hughes and Middlebrook (2015), are considered the obvious model for regulation. Summers (2012) explained that payment systems are a network governed by laws and standards that link bank accounts that provide monetary exchanges using

bank deposits. Based on Satoshi's (2008) white paper, Bitcoin follows its own protocol but is not a payment system. Lovell (2016) pointed out that currently without regulation, there is no recourse if cryptocurrency is stolen.

Massad (2019) asserted that cryptocurrency exchanges currently are not required to have systems in place to prevent fraud or conflicts of interest; they can trade against their own customers. This is something the New York Stock Exchange could not do. Regulations are needed to minimize risk, just like securities. Zuluaga (2018) states a clear definition of what qualifies as a security would allow the cryptocurrency market to develop and allow regulators to have the ability to protect investors, maintain efficient markets, and facilitate capital formation.

Currently, without standard regulation or oversight, criminals have the ability to anonymously commit criminal acts. Owners of the coins are anonymous because the owner of the cryptocurrency is named by a random combination of letters and numbers. Orr and Lancaster (2018) stated that cryptocurrency can be used for illegal transactions instead of cash for crimes such as sex trafficking, drugs, guns, fake identifications, assassinations, and the financing of terrorism. White-collar crimes like tax evasion and money laundering also can be transacted anonymously by using cryptocurrency. Orr and Lancaster (2018) asserted cryptocurrency can be used for almost anything and regulation and law enforcement are faced with new enforcement complexities.

Taxation is another benefit to cryptocurrency regulation. According to the Organization for Economic Co-operation and Development (OECD; 2017), the broad tax categories are consumption taxes, customs and excise taxes, environmental taxes, income taxes, and wealth taxes. Emery (2016) pointed out numerous discussions have taken place about regulation, but focus on taxation has been left out. Recently Internal Revenue Service (IRS) talks (www.irs.gov)

include making crypt asset transactions tax. Without consensus on cryptocurrency, Atkins (2014) pointed out there is no consensus on how cryptocurrency should be taxed. Piazza (2017) stated that due to a lack of regulation, the reliance is on self-reporting, potentially creating a mechanism for tax evasion. Global cooperation will be crucial to the taxation of cryptocurrency. De (2018) wrote that Germany's central bank director noted that the regulation of cryptocurrencies needs to be global and harmonized. Without regulation, Orr and Lancaster (2018) pointed out cryptocurrencies can be used to avoid paying taxes, preventing the government from tax revenue.

Timothy Massad (2019), former CFTC Chairman and current Senior Fellow from the John F. Kennedy School of Government at Harvard University, outlines seven recommendations to start the regulation of cryptocurrency. They are listed below:

1. Congress should pass legislation granting the Securities and Exchange Commission (SEC) or the Commodity Futures Trading Commission (CFTC) the authority regulate cryptocurrency. This regulation would include:
 - a. Offerings such as the Initial Coin Offerings (ICOs)
 - b. Distribution and trading
 - c. Trading platforms and exchanges; currently, exchanges fall under the multiple different countries they reside in or were incorporated in.
 - d. Wallets, brokers, and advisors
2. Congress should increase the resources for the SEC and CFTC to implement new authorizations and regulations. Without congressional approval for additional resources, this will not be feasible
3. The new legislation should set forth new core principles rather than regulations. Core principles should cover:

- a. Protection of customer assets
 - b. Governance standards
 - c. Conflicts of interest
 - d. Record keeping and periodic reporting
 - e. Transaction execution in competitive, open, timely manner
 - f. Pre-trade and post-trade transparency
 - g. Fraud prevention
 - h. Platform disclosures, including fees, liabilities, customer recourse, transaction policies
 - i. Risk management
 - j. Cybersecurity and disaster recovery options
 - k. Financial resources
 - l. Measures to minimize illegal activities like money laundering
4. Give SEC or CFTC to determine which offshore platforms should be required to meet US Standards or compliance to comparable standards before providing access to US Investors.
 5. Congress direct other agencies to consider different ways to meet core principles for centralized versus decentralized platforms.
 6. As a first step the Financial Stability Oversight Council or the Treasury. The department should issue a report recommending Congressional action to clarify regulation of the cryptocurrency sector. Winklevoss (2018) brothers have established the Virtual Commodity Association to bring structure to cryptocurrency. Massad

(2019) identified Global Digital Finance and the Association of Digital Asset Markets as two more groups working on self-regulation efforts for cryptocurrency.

7. The cryptocurrency industry should continue to develop self-regulation.

Legislation should give SEC or CFTC the authority to allow certain compliance matters to be self-regulated. Massad (2018) stated that the crypto industry should not wait around but formulate self-regulating standards. The knowledge from the industry is fundamental to successfully regulate.

Rumors and modifications in regulations and policy affect cryptocurrency prices. Zuluaga (2018) stated that policy uncertainty and confusing statements made by financial regulators complicate the potential rewards this new asset class can create. Zuluaga (2018) continued that the goal of regulators should be to create confidence in future regulation by defining how cryptocurrency fits into existing regulatory framework. Zuluaga (2018) provides a framework to increase regulatory certainty for cryptocurrency by creating policy that defines the difference between functional cryptocurrencies and promises to deliver cryptocurrencies. Under Zuluaga's (2018) framework, cryptocurrencies already in circulation would qualify as commodities and contracts promising future cryptocurrency regulators should make a distinction between the following:

- Contracts marketed as investments that can be traded in secondary markets are considered functional
- Contracts marketed as advance purchases of a commodity not tradeable before their launch and buyers would be refunded if the launch fails.

Contracts that pass the first step would qualify as a security and contracts that fit the second would not qualify as a security. Zuluaga (2018) believed this framework mitigates policy maker's concerns without shutting down this new potential asset class.

One of the bigger challenges of cryptocurrency regulation is the various global positions on cryptocurrency. There are various opinions, stages of regulation, and current regulations on cryptocurrency across the world. Spithoven (2019) stated that in addition to regulating cryptocurrencies, governments should also cooperate internationally to prevent the misuse of cryptocurrency. This will help prevent cryptocurrency transactions that fall out of one nation's regulation and move to a less regulated nation. Part of the discussion and concern when talking about the different global stances on cryptocurrency is the idea of a global currency, with cryptocurrency being possibly the best opportunity for a global currency.

Weaknesses of Regulation

Regulating cryptocurrency will be challenging, but finding the right time to regulate can be more challenging. Regulation too early could inhibit innovation and the possibility of new jobs or industries (Walch, 2017). The innovation of cryptocurrency and the advancement of cryptocurrency technology has the potential to outpace the ability to regulate. This is a phenomenon known as the Pacing Problem (Thierer, 2018), and can have profound ramifications for the regulation of emerging technologies like cryptocurrency. Theirer (2018) stated with every innovation; there are more questions about how the law can keep pace or if the law can keep pace. Wallach (2015) worried that the pace of technology had been kicked into overdrive, making it more difficult than ever for traditional legal schemes and regulatory mechanisms to work. Downes (2009) referred to this as the law of disruption. Technology changes exponentially, but legal systems change incrementally (Downes, 2009). Too much regulation,

too soon, according to Riles (2014) could stifle the developers from continuing with technological advances.

McMillan (2014) warned that too much regulation would kill cryptocurrency. Arraya (2018) stated the fear of overregulation would undermine innovation by discouraging risk-taking. The potential for overregulation has limited the number of investors pursuing cryptocurrency. Shanaev et al. (2019) found that excessive regulation of cryptocurrencies is counterproductive, and a hands-off approach at this current stage is more appropriate. Government commitment to not overregulate cryptocurrency and allow the industry to develop in a free environment contributes to lower market volatility (Shanaev et al., 2019).

Ostbye (2018) asserted that regulation could create obstacles for merchants as cryptocurrency users, to accept payment in cryptocurrency. Ostbye (2018) further stated that regulations are often binary in the sense that either merchants are allowed to accept cryptocurrency or not. This regulation would state that merchants can only accept government approved cryptocurrencies for payment. Users and operators of cryptocurrency may find this burdensome and make changes in their protocols to avoid regulations.

According to Pearce (2019) the lack of regulation has opened the possibility of using cryptocurrency as a valid method of exchange that would not have been possible in a regulated market. Pearce (2019) argued not all cryptocurrencies are the same and the attempt to create a standardized regulation will eliminate some of the cryptocurrencies. Libertarian investors argued that unregulated cryptocurrency will end the tyranny of inflation tax and the government's fiat money monopoly (Kupiec, 2018).

Cryptocurrency Across the Globe

The potential for cryptocurrency to become a global currency strengthens the need for cryptocurrency regulation. The idea for a global currency is not new; Mundell (2005) reminded that US President Franklin D. Roosevelt directed Secretary of Treasury, Henry Morgenthau Jr., to develop plans for a global currency. The discussion has continued beyond President Franklin Delano Roosevelt, with Jacobs (2018) pointed out the potential benefits of a global currency have been considered for decades. Before cryptocurrency, Mandeng (2018) claimed that currencies of the world had been controlled by the central bank of each country; this is not the same for bitcoin.

According to Jacobs (2018), the question still remains if cryptocurrency has the potential to play a role in the global financial system and what type of regulatory agency would be required to regulate it. Rzaeva (2019) claimed that some experts consider cryptocurrency as the future global currency. Bech and Garrett (2017) claimed debates on how nations should respond to this technology are occurring at finance, economic, and law conferences. Lansky (2018) believed introducing a national currency, either creating a new one or adopting an existing one, might significantly reduce risks associated with cryptocurrency.

Global Views on Cryptocurrency

Orr and Lancaster (2018) stated that each nation is dealing differently with cryptocurrencies, through regulation, forbidding it, or ignoring it. Godlov (2014) stated that many countries have classified differently based on their research of cryptocurrency's characteristics. According to Hughes and Middlebrook (2015), there is no national or international consensus for or against legislating cryptocurrency. Due to the different global views on cryptocurrency, regulating it will be challenging. The first step is to analyze where each

country stands on cryptocurrency. Lansky (2018) developed a simple classification method to classify individual countries stance on cryptocurrency. Lansky (2018) came up with six levels (0-6). Hansen (2016), along with the Library of Congress, tracks on an ongoing basis, the individual countries current position on cryptocurrency.

- Level 0: Ignoring. Countries that are ignoring or not dealing with the existence of cryptocurrency. Currently, there are approximately 150 countries at this level. Some of those 150 countries are Chile, Trinidad, Tobago, and Portugal.
- Level 1: Monitoring. These countries have acknowledged the existence of cryptocurrency and have decided to deal with them in the future. These same countries have not taken an active role in developing a plan towards cryptocurrency. Currently, this level consists of Croatia, Ireland, Belize, British Virgin Islands, Denmark, and Japan.
- Level 2: Recommendation. Countries in this level have recognized cryptocurrency exists and have recommended an approach to cryptocurrency. Most of the recommendations of these countries have been negative. Out of this level, 25 countries have issued warnings against the risks of cryptocurrency (Hansen 2016). The European Banking Authority (2014) released a statement claiming cryptocurrency is suited for micro-transactions, international payments, and currency for countries with unstable currencies. The European Central Bank considers cryptocurrencies as assets instead of currency but has acknowledged this may change. Bermuda, Brazil, Costa Rica, Malta, Moldova, and Serbia are some of the countries that fall into this category.
- Level 3: Guidance. This level is made up of countries that have issued guidance on methods to govern and regulate cryptocurrency. This level has claimed cryptocurrency shall be subject to the same regulations as anti-money laundering laws (Lansky 2018).

Hansen (2016) counted five countries, Argentina, Czech Republic, Canada, Singapore, and the US, as basic members of this level; other countries are also included in this level but have added specific directives to the primary guidance of the others. Dostov and Shust (2014) cited that the nature of cryptocurrencies makes the application of anti-money laundering challenging. According to Perez (2015), Switzerland has taken it a step further, and declared cryptocurrencies cannot be subject to value-added tax (VAT), but Hong Kong and the United Kingdom believe cryptocurrencies ought to be subject to value-added tax (VAT). Australia, Bulgaria, Canada, Estonia, Germany, Norway, Singapore, and the USA are considering cryptocurrency “sort of an asset” and are pursuing tax legislation applicable to assets. Poland and Slovenia have ruled that mining is subject to income tax, and Spain has declared cryptocurrencies are subject to gambling tax.

- Level 4: Regulation. These countries are developing predefined conditions before cryptocurrency related services are authorized. There are only two countries in this level, the USA (New Jersey and New York only) and Luxembourg. Gibraltar has recently introduced regulations governing distributed ledger technology.
- Level 5: Ban. According to Yanez (2015), Ecuador, Venezuela, and the Isle of Man have banned cryptocurrency and are preparing to make their own cryptocurrency. China, Iran, Colombia, Iceland, Lithuania, Lesotho, and Jordan have banned all banking institutions from using and accepting cryptocurrency. Xie (2019) reported in China the explosion of cryptocurrency brought fraud, theft, and scams resulting in China closing its transaction platform after \$5 million worth of bitcoin vanished leaving Chinese law enforcement confused about what was actually stolen. Algeria, Morocco, Nepal, Pakistan, Vietnam,

Bangladesh, Bolivia, Kyrgyzstan, Russia, Guatemala, Poland, Macau, and Thailand have a complete ban on cryptocurrency. Qatar and Bahrain have banned cryptocurrency within their country but allow their citizens to engage in cryptocurrency activities outside their country Hansen (2016).

According to the Law Library of Congress (2018) although all forms are known as cryptocurrency and use the same type of technology, the terms countries use to refer to cryptocurrency are different: digital currency (Argentina, Thailand, Australia), virtual commodity (Canada, China, Taiwan), crypto-token (Germany), payment token (Switzerland), cyber currency (Italy and Lebanon), electronic currency (Colombia), and virtual asset (Honduras and Mexico). Rzayeva (2019) further pointed out that Sweden and Norway have announced a complete rejection of cash circulation in the future. Currently, there is no single strategy for the development of cryptocurrency for the world. However, Rzayeva (2019) believed that an electronic money system should be under the control of financial regulators. Jacobs (2018) stated that effective management of a global cryptocurrency could be achieved by an international organization that promotes a global economy rather than one that represents the interest of sovereign nations looking for an advantage. Figure 2 gives a summary of the world views of cryptocurrency.

Figure 2

Source Steemit

<https://steemit.com/cryptocurrency/@ka82/a-world-of-cryptocurrencies>

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Prasad lists the different classifications by countries in Table 1.

Table 1

Different Classifications By Countries

Country	Classification
South Africa	Intangible Asset
Argentina & Spain	Money (illegal)
Canada& Japan	Means of Payment
Kyrgyzstan, United Arab Emirates, Czech Republic	Commodity
Hong Kong	Virtual Commodity
Israel & Norway	Taxable Asset
Indonesia	Payment Tool
Bulgaria	Financial Asset
Switzerland	Foreign Currency
Austria	Intangible Commodity

Summary of Literature Review

Salawu and Moloji (2018) asserted the world is not static, change as proven in the past, is inevitable. Rino Borini, co-initiator of Switzerland's largest crypto event platform (Finance 2.0) emphasizes cryptocurrencies are a faster, cheaper, and much safer way of exchanging funds and information (Swiss Financial Center, 2017). According to Nikolic (2017), the Chief Executive of Deutsche Bank John Cryan believed money is costly and inefficient and thinks that it will be replaced with more productive assets. This opinion could mean replaced by a combination of finance and technology or digital money. Research conducted by Dr. Hileman and the Center for

Alternative Finance (2017) concluded that more than 3 million people are using cryptocurrencies as an alternate payment system for goods and services. Hacker and Thomale (2017) stated that the lesson learned from cryptocurrency is that there is nothing constant in how cryptocurrency is defined.

Cryptocurrency has a long way to go before it replaces cash and credit cards but not long enough to not give it due consideration of its place in the future. Cryptocurrency is still in its emerging, but its popularity continues to grow daily, and most countries are still trying to define cryptocurrency. As cryptocurrency technology advances at a rapid pace, legislation and regulation has not. With the ability of cryptocurrency to be borderless, this is a global issue. The Financial Stability Board recommended that financial regulators in all countries work together to develop a coordinated international regulatory response to cryptocurrency (Edwards et al., 2019). This same organization has taken it upon themselves to develop metrics for monitoring the financial risks of cryptocurrency (Edwards et al., 2019). Hughes and Middlebrook (2015) stated at the risk of suffocating innovation, cryptocurrency become regulated for the sake of fighting crime, protecting infrastructures, and protecting consumers.

Hughes and Middlebrook (2015) warned that failing to regulate new technology that competes with existing technology can hamper the markets. Regulation is not at a consensus yet, nor is the classification of cryptocurrency. This qualitative study will aid in consensus on the need for cryptocurrency as a separate asset class and outline the reasons cryptocurrency does not belong in current traditional asset classes. This qualitative research study will aid in narrowing the gap to consensus on cryptocurrency as an asset class. This study will discuss the global impacts and regulation of cryptocurrency.

Transition and Summary of Section 1

Understanding the characteristics of cryptocurrency is important in determining a classification for cryptocurrency. At the beginning of the 21st Century (Ulyanova, 2018) new regulations were created, there were financial market changes, and new ways were found to conduct business, all due to the emergence of cryptocurrency. Consensus on cryptocurrency's classification and regulation is nonexistent and almost elusive. Currently, each country has a different perception of what cryptocurrency is and how or if to regulate. Dyhrberg et al. (2018) stated that the majority of the world's countries have yet to determine cryptocurrency's classification and legal status.

Section 2: The Project

The regulation of cryptocurrency brings a level of legitimacy to virtual currency (Mandjee, 2015). Greer (1997) stated that an asset class is a group of assets that share economic similarities to each other and distinct characteristics that separate them from assets outside their asset class. This qualitative study will explore the characteristics of cryptocurrency, and similarities and differences with existing asset classes. According to Meynard (2017), the first real step for classification could be the way governments recognize cryptocurrency. Governments have researched cryptocurrency, investigating their thoughts on classification and regulation, will be beneficial to this research.

Section 2 of this qualitative study explores the purpose of the study, along with the role of the researcher and a description of the participants. Mills and Durepos (2013) stated the case study method is a research tool, such as surveys, interviews, and observations. This section identifies the case study research method and designs that will be used by the researcher. The discussions of the activities required to perform this qualitative research are outlined within this section of the dissertation. Section 2 breaks down and discusses data collection, methods, and analysis. Interview questions will be a main point of data collection. According to Belk et al. (2013), interviews are useful because they give a voice to people's thoughts and opinions. Arsel (2017) stated that interviews are part of the iterative circle that moves back and forth between conceptualization, data collection, and data analysis.

Purpose Statement

The purpose of this qualitative case study is to explore the lack of consensus regarding classification of cryptocurrency as a new asset class and the inability of governments to regulate it. This qualitative research will discuss the positive and negative effects for stakeholders if

cryptocurrency is classified as its own asset class. Brainard (2018) articulated governance may need to evolve over time, but one thing that is clear is that strong governance arrangements will be required to provide the coordinated operational and financial risk management. This case study will discuss the governments' ability to classify cryptocurrency as an asset and explore current regulatory strategies by the United States government. Research will examine the distinct characteristics that make cryptocurrency an asset and the need to create a separate asset class for cryptocurrency. This case study will explain the asset qualities of cryptocurrency and the similarities cryptocurrency has with other assets. This qualitative study will describe the current regulation of other assets and their similarities to cryptocurrency regulation. This study will describe the reasons for regulating cryptocurrencies as similar to those for other financial assets and which government agencies would potentially be the regulating authority. According to Auer and Claessens (2018), these reasons can be classified into three categories: combating the use of funds for illicit activities, protecting consumers and investors against fraud, and ensuring the integrity of markets, payment systems, and overall financial stability.

Role of the Researcher

This study was conducted using the case study design under a qualitative methodology. A qualitative research study allowed the researcher to get a better understanding of the interviewed participant's thoughts and opinions on the classification of cryptocurrency. The researcher asked questions about asset classification for cryptocurrency and the governance or regulation of cryptocurrency.

Sutton and Austin (2015) stated that the role of the researcher in a qualitative study is to access the thoughts of the participants. The researcher accessed the thoughts of the participants through tools like interviews, discussions, and surveys. These tools are designed to promote a

conversation with the intent of delving deeper into the topic. Roger et al. (2018) stated that qualitative research gives time and space to engage in dialogue. Dialogue with the participants was the source of data collection for this research. The researcher wrote the interview questions and conducted the interviews. If surveys were used, the researcher developed the survey.

According to Denzin and Lincoln (2003), research is considered an instrument of data collection. Simon (2013) asserted a qualitative researcher asks questions, then listens, then thinks, then asks more probing questions to get to that conversations. The qualitative interviews are one of the ways the data were collected for the researcher. The researcher was also responsible for managing the data, and any personal information gathered from the participants. The researcher sifted through the data and was the primary analyst of the data. The researcher formulated the data into categories and responses. Upon completion of the data analysis, the researcher interpreted the data and developed summaries of the responses to the research questions.

Participants

The choice of research participants is determined by the focus of the research, enabling the attainment of the research aim and the answering of the research questions (Symon & Cassell, 2012). Participants were chosen based on the research topic. Creswell (2009) emphasized that participants are selected based on who can provide the best information in response to the research questions and enhance the understanding of the topic of study. The topic of cryptocurrency required a specific audience with opinions and experience with cryptocurrency. The participants also needed knowledge of asset classifications and characteristics of investable items.

Kvale and Brinkmann (2009) recommend between five and 25 participants for a qualitative study using interviews to gather data. When a case study has been chosen, the study may include many people (Brannen & Nilsen, 2011). For this qualitative case study, the anticipated number of participants was between 20 and 30.

Participants for this case study were not anonymous, and most were known by the researcher. Participants known to the researcher from the fields of banking, investing, asset regulation, currency regulation, and the cryptocurrency specific industry were the target group for the research questions. Additional potential participants from cryptocurrency podcasts, journals, and academia were contacted via email to elicit participation in the study. The researcher discussed the case study and questions with the potential participants and answered any initial questions they had. Due to the uniqueness of the study topic, participants were not from a large pool. Symon and Cassell (2012) claimed that in some cases, participants may have been difficult to access, using snowball sampling allowed additional participants to be reached. In the event selected participants were not accessible, that participant may have been able to identify other participants for the study (snowballing).

The researcher gained consent from all participants to participate in the study and protected their privacy. Privacy was protected by locking all data in a secured safe or password protected on the researcher's computer. The researcher and chair were the only people to have access to the research. The researcher provided the potential participants a consent form for participation in the case study and discussed any privacy concerns and considerations they had. The researcher had extensive experience with case studies and ensured participant's privacy at the highest level.

Research Method and Design

The goal of the research was to produce new knowledge. There are three approaches to research: qualitative, quantitative, and mixed methods. Research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation (Creswell & Creswell, 2017). Qualitative and quantitative research are the two approaches to a research problem. Qualitative research is an approach that explores the understanding and meaning of the gathered data through words. Qualitative research builds descriptions from meanings and themes discovered during questioning and interviewing. Quantitative research builds models and figures to explain the data gathered by observing and analyzing through numbers. Perhaps the most important methodological differences between qualitative and quantitative are twofold: the difference between (1) aiming for an explanation and (2) aiming for an understanding, and the difference between (1) a personal role and (2) an impersonal role for the researcher (Stake, 2010). Mixed methods research approach uses both quantitative and qualitative approaches to provide a clearer understanding of the research problem.

Discussion of Method

The research method was a case study. The case study method was the best method to collect and analyze data fairly. Not surprisingly, the case study has been a common research method in psychology, sociology, political science, anthropology, social work, business, education, nursing, and community planning (Yin, 2014). The case study provides a more simplistic approach to the research by allowing detail to be collected where using other research methods might be more difficult.

Using a case study, the researcher can explore and analyze the research topic through the analysis of collected data from multiple sources. The investigation and exploration of the research are more detailed, profound, and sometimes intense for the researcher. Triangulation of financial data will be the approach used during this case study. Data triangulation is where data is collected from more than one data source or respondent group (Denzin, 1978). Triangulation provides a way for the researcher to frame and map the collected data from multiple sources. Triangulation facilitates the validation of data cross verification from more than two sources (Bogdan & Biklen, 2006).

Case study research is consistently described as a versatile form of qualitative inquiry most suitable for comprehensive, holistic, and in-depth investigation of a complex issue (phenomena, event, situation, organization, program individual or group) in context, where boundary between the context and issue is unclear and contains many variables (Creswell, 2014). Within the case study, the researcher had the opportunity to use multiple methods to collect the financial data needed for this research. This gave the researcher more flexibility within the study.

Once the research approach and research design was determined, the method needed to be decided. The next decision was to decide what methods work best to collect data for the research. The research methods were questions, data collection, data analysis, interpretation, and validation. The researcher did not have to pick a particular one, but could have selected to use a combination of research methods.

Questions are one of the more popular research methods. The researcher creates clear and precise questions about an issue the researcher is interested in. The questions are developed to avoid one-word answers and to generate a discussion with more elaborate answers. Questions can ask or be given in the form of a survey or questionnaire. Study participants can fill out the

surveys and questionnaires in private allowing for the study participant to be more comfortable, giving an honest response. Questions can also be given orally in an interview or group type discussion. This allows the researcher to get a discussion going and more robust response.

Discussion of Design

Besides deciding what approach to take towards a research problem, the researcher must decide on what research design to use. The research design is the methods and procedures that will be used to conduct the research. These methods and procedures are used to collect and analyze the variables measured during the research. Conducting the research is a large part of the research process, so picking the right design is very important. Research designs are types of inquiry within qualitative, quantitative, and mixed methods approach that provides specific direction for procedures in research design (Creswell, 2014).

Qualitative designs have multiple types of research designs that can be used in qualitative research. Qualitative research, also known as flexible research, is non-quantitative. Qualitative data is collected by observing. The researcher observes the participant's actions, what they do, and what they say. Qualitative research is more open-ended. The methods usually involve interviewing and observing a small group of participants.

Case Study research design involves studying and comprehending a single situation. The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how were they implemented, and with what result (Schramm, 1971). Zainal (2007) asserted as an alternative to quantitative or qualitative research; case study is a solution when a large sample population is not available. Because the topic of cryptocurrency did not provide a large sample population, a case study was the chosen method for this research.

The case study method was chosen for this qualitative research because it allowed a more in-depth exploration on cryptocurrency as a separate asset class. Crowe et al. (2011) asserted that the case study approach allows in-depth, multi-faced explorations of complex issues in their real-life settings. Cryptocurrency is a real-life complex issue that a case study research will help simplify. The case study will investigate thoroughly and deeper than other research methods. Yin (1994) stated that case studies are the preferred strategy when how and why questions are being posed. The research questions for this study involved asking how and why cryptocurrency can be a separate asset class and how and why cryptocurrency can be regulated.

Population and Sampling

Participants belong to the research population, which is the group of individuals having one or more characteristics of interest (Asiamah et al., 2017). The research required specific people knowledgeable and interested in cryptocurrency. It was important for the population to have an interest and to have knowledge of cryptocurrency, asset classes, and government regulation. The population was made up of individuals from banking, investing, finance, accounting, government, and academia. The population did not need to be a large population to gather data about the research topic. The small population allowed for a deeper discussion per participant. Baskarada (2014) stated that qualitative studies focus on relatively few participants who have the ability to describe their experiences and/or knowledge with respect to some research questions. The qualitative design differs from its quantitative counterpart in terms of the sample size required (Allwood, 2012).

A proper population definition or specification is critical because it guides others in appraising the credibility of the sample, sampling techniques, and outcomes of the research (Asiamah et al., 2017). The sampling methods used were purposive sampling and snowball

sampling. Tongco (2007) emphasized the purposive sampling technique, also called the judgment, is the deliberate choice of an informant due to the qualities the informant possesses. Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Bernard, 2002). For this research, the researcher had established questions and solicited answers from a population that had knowledge and experience with cryptocurrency. To complement the purposive sampling method, the researcher also used the snowball sampling method. In this method, the existing study population recruits future participants amongst their acquaintances and colleagues. The snowball method not only takes little time but also provides the researcher with the opportunity to communicate better with the participants, as they are acquaintances of the original participants (Polit-O'Hara & Beck, 2006). The sampling frame consisted of a list of individuals in the population.

Data Collection

For the researcher to get to a viewpoint, there had to be a generation of data. Data provided insights, thoughts, and opinions about the research topic. Qualitative research can help researchers access the ideas and views of the selected research participants (Sutton & Austin, 2015). The focus of the qualitative data was cryptocurrency regulation and the cryptocurrency as a separate asset class. The collection of data for this qualitative study came from individuals with knowledge of cryptocurrency and asset classes. Creswell and Poth (2018) stated that a typical reaction to thinking about qualitative data collection is to focus on the actual types of data and the procedure for gathering them.

Instruments

The researcher was the main instrument for data collection. The phrase researcher-as-instrument refers to the researcher as an active respondent in the research process (Hammersley & Atkinson, 1995). The researcher for this study was the sole interviewer for all interview questions and participants. Herriott and Firestone (1983) argued that when there is more than one interviewer, inconsistencies in interview style and approach may affect the quality of the research conversation and, ultimately, the study findings. Owens (2006) asserted through the researcher's facilitative interaction, a conversational space where respondents feel safe to share their experiences is created. For this qualitative study, the researcher brought his knowledge and viewpoints to the study. This was useful in establishing conversations and dialogues with the participants. Once the researcher established the conversational space, the participants realized the researcher's level of knowledge and felt more comfortable with a technical conversation.

An interview is considered to be a social interaction based on a conversation (Warren & Karner, 2015). Brinkman and Kvale (2015) articulated that an interview is where knowledge is constructed in the interaction between the interviewer and the interviewee. Brinkmann and Kvale (2015) recommended using an interview guide. The researcher developed an interview guide that included specific questions for this qualitative study.

The following interview questions were used by the researcher to conduct the interview:

Background

IQ1. What is your background with cryptocurrency?

IQ2. Do you own cryptocurrency?

Asset Class

IQ3. Are you familiar with the current asset classes?

IQ4. Do you think cryptocurrency aligns with one of the current asset classes?

IQ5. What are your thoughts about cryptocurrency as a separate asset class?

IQ6. Can and should the government create a separate asset class for cryptocurrency?

IQ7. Why do you think the government hasn't created a separate asset class for cryptocurrency?

IQ8. What pros and cons do you see for classifying cryptocurrency as one of the current assets? As its own asset?

Regulation

IQ9. Do you feel the government has a strategy or is developing a strategy to regulate cryptocurrency?

IQ10. In your opinion, how will the government regulate cryptocurrency?

IQ11. What government agencies would be involved in the regulation of cryptocurrency?

The researcher will create and employ an interview guide to facilitate the interview process. The research questions have been created to reflect the intent of the qualitative study. The interview questions are answerable inquiries for the problem statement and designed to initiate a discussion. An interview guide approach involves the development of five or six neutral, open-ended interview questions, each of which is focused on one aspect of the research topic (Knight, 2013). Menzies et al. (2016) explained that an interview guide is simply a list of the high-level topics that the interviewee plans on covering in the interview with the high-level questions that will provide answers related to the topic. Four factors listed by Kennedy (2006) are,

- an interview guide acknowledges that research questions are not the same as interview questions,

- people's supported theories are different from their theories in use,
- interviews are social occasions,
- testimony by itself is a weak form of evidence.

These four factors influenced the responses from the interviewee (Kennedy, 2006). The interview guide used for this qualitative study can be found in Appendix A.

Data Collection Techniques

Silverman (2000) asserted that qualitative methods, such as interviews, are believed to provide a 'deeper' understanding of social phenomena than would be obtained from purely quantitative methods. This study will use a semi-structured interview type. Britten (1999) stated semi-structured interviews consist of several key questions that help to define the areas to be studied, but also allows the interviewer or interviewee to deviate in order to pursue an idea or response in more detail. A semi-structured interview, described by Wilson (2014), combines predefined questions like those used in structured interviews with the open-ended exploration of an unstructured interview. Wilson (2014) stated that this type of interview involves the use of open-ended and close-ended questions and can provide qualitative and quantitative data.

Data Organization Techniques

Data organization is important for the researcher to sift through the accumulated data sufficiently and in a timely manner. Data will be annotated on the interview guide by the researcher (and interviewee). Each interview sheet will be scanned into a folder housed on DropBox. DropBox is password protected. A research summary will be created for each individual question with a researcher's summary at the end. All data will be secured in a locked desk drawer and on a laptop that is password protected.

Data Analysis

After the data collection is completed, the next step is to analyze the collected data. The researcher must consider their approach to data analysis and sift through the collected data. Approaches to data analysis include organizing, reading, coding, and interpreting data (Cypress, 2018). Sutton and Austin (2015) suggested the most important part of data analysis and management is to be true to the participants. Maxwell (2005) stated for novices, data analysis is probably the most mysterious aspect of the qualitative endeavor.

Qualitative Data Analysis

Coding is the heart of qualitative data analysis (Creswell & Poth, 2017). Sutton and Austin (2015) defined coding as the identification of topics, issues, similarities, and differences that are revealed through the participants' narratives and interpreted by the researcher. Coding is the pivotal link between collecting or generating data and developing a theory that explains the data (Chun Tie et al., 2019). Cypress (2018) stated coding involves making sense of the texts from interviews, observations, and documents. The process, according to Cypress (2018), involves building detailed descriptions, applying codes, developing themes, and providing interpretations in the light of the researcher's views and perspectives.

To codify is to arrange things in systematic order, to make something part of a system or classification, to categorize (Saldana, 2013). Grbich (2007) indicated when codes are applied and reapplied to qualitative data; you are codifying – a process that permits data to be segregated, grouped, regrouped, and relinked to consolidate meaning and explanation. For this qualitative study, the coding will be categorized by opinions and thoughts. Rossman and Rallis (2003) explained the differences between categories and themes; a category is a word or phrase

describing a segment of your data that is explicit, whereas a theme is a phrase or sentence describing more subtle and implicit processes.

Saldana (2013) defined a theme as an outcome of coding and categorization. The coding process for this qualitative study will organize the views of the participants into themes based on the coding of the responses to the research questions. Boyatzis (1998) explained that a theme, at a minimum, describes and organizes possible observations or, at the maximum, interprets aspects of the phenomenon. Generally, the researcher looks for how various themes are similar, how they are different, and what kinds of relationships may exist between them (Gibson & Brown, 2009). Saldana (2013) asserted theming the data is not an expedient method of qualitative analysis; it is as intensive as coding and requires comparable reflection on participant meanings and outcomes. Packer (2011) cautioned that a theme never simply emerges; it is the product of interpretation, themes that stand out tell us more about the researcher than about the interviewee, and should not be the starting point for analysis.

Exploratory coding methods was used for this qualitative study. Saldana (2013) described exploratory coding methods as exploratory and preliminary assignments of codes to the data before more refined coding systems are developed and applied. Provisional coding, an exploratory coding method, was used initially. Provisional Coding establishes a predetermined start list set of codes prior to fieldwork (Miles & Huberman, 1994).

Patton (2015) asserted that computer programs could facilitate the work of analysis, but they cannot provide the creativity and intelligence that make each qualitative analysis unique. The researcher for this qualitative study used qualitative data analysis computer software NVivo and reference management software Zotero. NVivo is designed to help organize and analyze qualitative data like interviews, open-ended survey responses, journal articles, documents, social

media, and web content. Zotero is an open-source reference management software that was used to manage bibliographic and reference materials.

Qualitative Reliability and Validity

Reliability and validity should be taken into consideration by qualitative researchers while designing a study and analyzing results (Patton, 2002). Reliability and validity are two components of qualitative research. Verification of the data analysis concerns the general liability, the reliability, and the validity of findings (Fink, 2000). Cypress (2018) offered that meticulous attention to the reliability and validity of research studies is particularly vital in qualitative work.

Reliability

Reliability and validity are ways to show the reliability of the results of the analysis and the attentiveness of the research processes involved. Reliability is based on consistency and care in the application of research practices; these are reflected in the visibility of research practices, analysis, and conclusions (Davies, 2002). Creswell (2014) suggested qualitative researchers should be concerned with the reliability of their research prior to conducting the study. Sutton and Austin (2015) confirmed there is no statistical test that can be used to check reliability and validity as there are in quantitative research. Even though there are no statistical means to check reliability and validity in a qualitative study, the researcher will eliminate researcher bias and maintain thorough records to reduce concerns of trust and accuracy. Yin (2014) stressed the importance of accurately recording and transcribing interviews.

Validity

Yin (2014) stated the validity of a qualitative study refers to how accurately the research findings represent the concept that it claims to measure. Validity in research is concerned with

the accuracy and truthfulness of scientific findings (Van Manen, 1990). Creswell (2014) recommended that qualitative researchers use at least two validation strategies in their research. The first method the researcher will use that Creswell (2014) suggested was to explore researcher bias. Roberts et al. (2006) suggested a process called reflexivity, where the researcher exposes their ability to be unbiased. The researcher included this in their study. A second method used was respondent validation. With respondent validation, the researcher allowed the participants to review their responses for accuracy before the researcher committing them as data.

Saturation

Lipworth et al. (2013) defined saturation used in a qualitative study as a criterion for discontinuing data collection and analysis. The sample size is determined to be sufficient when additional interviews do not result in identifying new ideas, an endpoint called data saturation (Sargeant, 2012). Sandelowski (2008) stated the researcher has reached saturation when there is informational redundancy. The researcher determined if additional participants were needed based on if saturation occurred. Once you reach the point where you have not received any new answers to your questions after the last few interviews, you have likely reached saturation and further interviews are unlikely to provide much value (Menzies et al., 2016). Menzies et al. (2016) further stated saturation is a good measurement to determine if the interview guide needs to be modified.

Triangulation

Wilson (2016) defined triangulation as using more than one particular approach when doing research to get a richer, fuller data to help confirm the results of the research. Natow (2019) stated researchers using interviews frequently gathered data from multiple sources as a method of triangulation. Triangulation is using several people in data gathering and analysis

processes (Flick, 2002). The researcher intended to use a large group of interview participants. Gathering data from a large group of interviewees is a form of triangulation (Natow, 2019).

Transition and Summary

In Section 2, the researcher explained the qualitative research methods and design, the role of the researcher, and the study participants. In Section 2, the researcher defined the population that the sampling would be drawn from. The researcher revised the interview questions and created an interview guide. The researcher also outlined the data collection instruments and techniques that will be used in this qualitative study. Section 2 also contains a discussion on the qualitative analysis that the researcher will perform for this study.

Section 3 will provide the research findings and the results from the qualitative study. The researcher will present the data collected from the study participants. Additionally in Section 3 the researcher will provide their recommendations for action or further study.

Section 3: Application to Professional Practice and Implications for Change

Section 3 is a culmination of the cryptocurrency research conducted for this qualitative study. Within Section 3 are the interview questions, interview responses, and research findings. The overview of the study includes the research questions and outlines the purpose of the study and the research process. Following the presentation of the findings, the researcher provides recommendations for action and suggestions for further research. The researcher also reflects upon his experience with the whole research process. Section 3 concludes with different aspects of the study and how the research adds to existing literature.

In this section, the researcher notes the findings based on interview responses and outlines how they relate to the problem statement. The presentation will detail why this study was conducted and the importance of the qualitative study to cryptocurrency. Abdullah et al. (2009) defined knowledge sharing as the process where individuals exchange their knowledge and ideas through discussions or other forms of social interaction to create new knowledge or ideas. This presentation of findings will share the knowledge gained through research, discussions, interviews, and study. The sharing of knowledge is important for advancement of any new technology. Ismail et al. (2013) shared that the world has witnessed that knowledge has become a valuable resource and asset in a new economy, which demands people to create knowledge and attain, apply, and share knowledge effectively.

Sharing the knowledge gained from this qualitative study will assist future researchers, finance professionals, regulators, and investors with their work and understanding of cryptocurrency as an asset class. Alavi and Leidner (1999) stated literature shows that knowledge sharing can significantly improve work-quality, decision-making skills, problem-solving efficiency, and competency. The research conducted in this study can also be used as a stepping

stone for future research, sharing the knowledge gained in this study important for future research.

Overview of the Study

The purpose of this qualitative case study is to explore the lack of consensus regarding the classification of cryptocurrency as a new asset class and the inability of governments to regulate it. This qualitative research will discuss the positive and negative effects for stakeholders if cryptocurrency is classified as its own asset class. The interviews' objective in this qualitative study was to gain opinions from individuals involved in cryptocurrency on the need for a separate asset class for cryptocurrency.

The research began with identifying potential research participants with a background in cryptocurrency. This identification and recruitment of interviewees was challenging and sometimes frustrating. One of the benefits of cryptocurrency is its privacy and anonymity. Idebdou (2015) highlighted anonymity as one of the advantages of using bitcoins. Anonymity in a virtual currency is unique because each transaction has a unique address that is not shared publicly (Idebdou, 2015). This benefit is one of the reasons why individuals invest in cryptocurrency. They want the anonymity that comes with using cryptocurrencies like bitcoin. This interest in anonymity caused potential interviewees to be reluctant to participate in this study. Although interested in the study and had thoughts on the problem statement, potential interviewees declined the researcher's invitation or backed out of scheduled interviews.

The candidates that agreed to participate were still concerned with anonymity and the use of the information provided to me. On the other hand, several candidates were excited to discuss cryptocurrency and share their knowledge of the topic. Cryptocurrency is still a fairly new topic, so participants had strong thoughts and opinions on cryptocurrency's present state and future.

Part of the research for this qualitative study included regulation. Participants showed concerns about this research study being used to push for regulation. Advocates believe financial freedom is part of the crypto's DNA, a freedom created by Bitcoin (McElroy, 2019). Some potential candidates declined participation due to the impression this study would be used to promote government regulation. Deschapell (2014) stated widespread failure to understand the fundamental principles behind the Bitcoin protocol and its implications can lead governments to make decisions that will ultimately harm economic development.

The topic of cryptocurrency is unique and still evolving. Finding participants with a thorough understanding was challenging. Cryptocurrency is a growing technology that is continuing to evolve and change daily. The researcher needed to recruit participants that have knowledge of cryptocurrency and a strong understanding of how it works. Familiarity with cryptocurrency was not enough to provide quality data for this study. The researcher chose participants who understand cryptocurrency and are knowledgeable enough to formulate answers to the research questions. The participants were voluntary and willing participants to the study. The participants all have favorable opinions of cryptocurrency, and most are involved with cryptocurrency as employment. The findings from the research offer opinions on an asset class for cryptocurrency and cryptocurrency regulation.

The data collection process began with the creation of an interview guide (Appendix A). The interview guide was distributed to qualified participants. The interviews consisted of three sections; background, asset class, and regulation. The background section consisted of two questions written to solicit cryptocurrency background information from the interviewee. The asset class section consisted of six questions that asked opinions and thoughts on cryptocurrency and asset classes. The questions also were designed to determine the asset class knowledge level

of each interviewee. Since a big part of the research is cryptocurrency as a separate asset class, this line of questioning was important. The last section was regulation. This three question section asked opinions and thoughts about regulating cryptocurrency. Each section provided questions related to that respective section. The questions were written to stimulate conversation rather than short answers. The interview questions used for this qualitative research study were:

Background

IQ1. What is your background with cryptocurrency?

IQ2. Do you own cryptocurrency?

Asset Class

IQ3. Are you familiar with the current asset classes?

IQ4. Do you think cryptocurrency aligns with one of the current asset classes?

IQ5. What are your thoughts about cryptocurrency as a separate asset class?

IQ6. Can and should the government create a separate asset class for cryptocurrency?

IQ7. Why do you think the government hasn't created a separate asset class for cryptocurrency?

IQ8. What pros and cons do you see for classifying cryptocurrency as one of the current assets? As its own asset?

Regulation

IQ9. Do you feel the government has a strategy or is developing a strategy to regulate cryptocurrency?

IQ10. In your opinion, how will the government regulate cryptocurrency?

IQ11. What government agencies would be involved in the regulation of cryptocurrency?

Presentation of the Findings

The presentation of findings for this qualitative study included conclusions correlated with the literary review and the project framework that addressed the general problem of the inability to determine an asset class for cryptocurrency, resulting in the governments' inability to regulate it. In Section 1, the conceptual framework for the qualitative study was developed. The conceptual framework is based on ideas researched from literature and provides the foundation for this qualitative study. The conceptual framework defined asset classes and outlined determining currency value. Defining asset classes was necessary at this stage since the research questions focus on cryptocurrency as a separate asset class. The conceptual framework also discussed the development of a global currency.

The participants in this study were individuals with experience and knowledge of cryptocurrency. The individuals who participated in this qualitative study ranged from cryptocurrency hobbyists to individuals employed in the cryptocurrency sector. The participants' responses addressed each research question asked of them, regardless of what the participant's role in cryptocurrency, all had an enthusiasm towards the success and future of cryptocurrency. All the participants believed in the future of cryptocurrency and the new technology had a place in our economic future. Through discussions and interviews with participants, different themes developed. These themes didn't follow trends based on employment or career choices; they developed based on opinions and experience.

Background

Understanding the background, as it relates to the topic, is an important step for the researcher. According to Sargeant (2012), the subjects sampled must be able to inform important facets and perspectives related to the phenomenon being studied. To fully understand the

question and provide informed responses, the participants need to have a background in cryptocurrency. The first two questions from the interview guide aimed to establish the background of the participants as it relates to cryptocurrency.

Interview Question 1

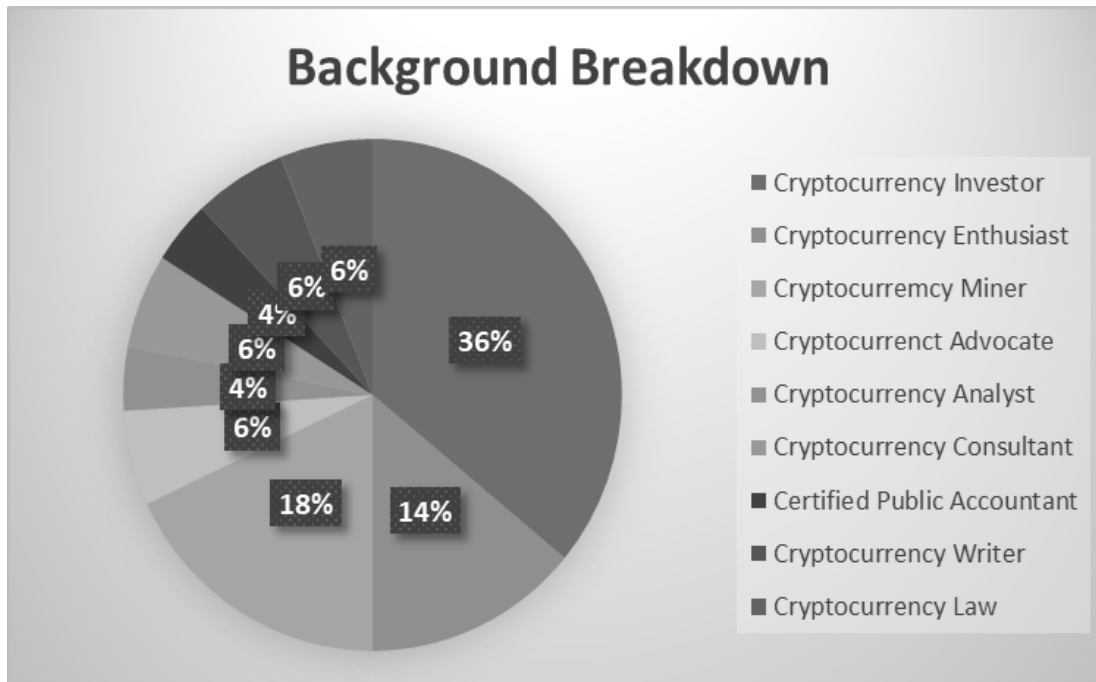
The first interview question presented to the study participants answered: What is your background with cryptocurrency? Initially, I anticipated the backgrounds to be similar and the common theme being all in favor of cryptocurrency. Qualitative researchers often think of themselves as forging important interpersonal relationships with their participants (Korth, 2002). As I established a relationship with each participant, I found how diverse their backgrounds were in and out of cryptocurrency. All of the participants have a background in cryptocurrency. The backgrounds were impressive and represented individuals earning a living in cryptocurrency rather than hobbyist. The majority of the participants are cryptocurrency traders and investors. Some of the participants are also cryptocurrency miners and cryptocurrency writers. The writers are from newsletters, blogs, and community forums. Some invest their own money, and some have investment companies that assist customers with cryptocurrency investments.

Additionally, some participants classified themselves as advocates for cryptocurrency. The advocate for an alternative currency to fiat currency and believe a digital currency is needed for the future. Some of the advocates believe in the anonymity of cryptocurrency and advocate against government regulation. The participant group was diverse in their background in cryptocurrency but shared a strong understanding of cryptocurrency. I was surprised to find participants that deal with compliance and the legal representation of cryptocurrency. There are cryptocurrency attorneys, compliance individuals, and cryptocurrency fraud investigators. These are people working on cases and with individuals with legal cryptocurrency issues and do so as

part of their full-time job. These career fields were a surprise and represented the advancement of cryptocurrency. Figure 3 depicts the breakdown of the participant's backgrounds.

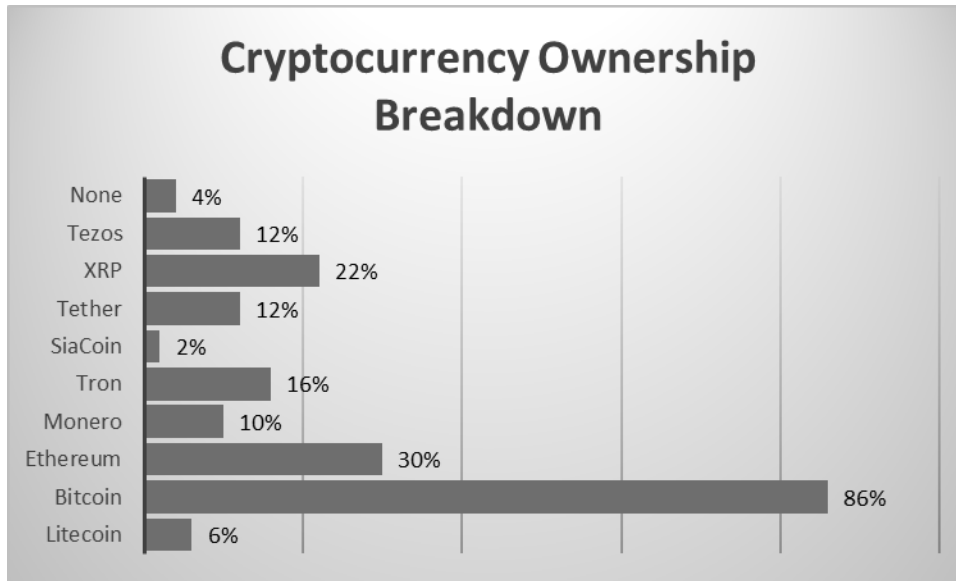
Figure 3

Background Breakdown



Interview Question 2

The second interview question was whether the study participants owned any cryptocurrency or not. The majority of participants own cryptocurrency, but a small percentage do not. The majority of the participants own Bitcoin, and several of them own multiple alternate coins. The second most held cryptocurrency by the qualitative study group was Ethereum. Ethereum is an open-source, blockchain-based platform that enables smart contracts between its users (Frankenfield, 2020). The current pandemic has forced some of the participants to take a profit in cryptocurrency that would have otherwise continued to be held. Chen (2019) defined profit-taking as the act of selling a security in order to lock in gains after it has risen appreciably.

Figure 4*Cryptocurrency Ownership Breakdown***Asset Class**

The qualitative study explored the classification of cryptocurrency as a separate asset class. The following six questions from the interview guide are asset class themed questions. The researcher is trying to establish the participant's knowledge base of the different asset classes and the participants' thoughts on a separate asset class for cryptocurrency. Klement (2019) defined an asset class as a group of assets with similar exposure to the economy's fundamental drivers.

Interview Question 3

Interview question number three involved asset classes. The question was basic and asked if the participants were familiar with the different asset classes. The responses indicated the majority of the study participants understood the different asset classes. Most elaborated on their understanding of the different asset classes. Some participants classified cryptocurrency as an asset class of decentralized virtual currency. Based on the problem statement of this

qualitative study, it was important that the participants understood the different asset classes.

One participant that is a cryptocurrency day trader stated:

If pertaining to Cryptocurrency asset classes, the US Treasury categorizes BTC as a decentralized virtual currency. The Commodity Futures Trading Commission classifies BTC as a commodity, and the IRS classifies it as an asset. For the most part, people refer to it as an asset because its value comes from scarcity. (personal communication, August 12, 2020)

One of the participants that fell into the legal career category responded with:

There are several definitions for asset classes, but as a generality, I'd say I'm loosely familiar with asset classes in the agnostic to cryptocurrency sense, which I presume this question is asking. (personal communication, July 27, 2020)

A cryptocurrency business owner and investor added:

I am assuming that you are referring to reserve assets (bitcoin and ether), cryptocurrencies (digital form of payment), platforms (smart contracts), utility token (that run on a blockchain platform that they don't manage/control), security tokens (linked to external assets) and crypto commodities, appcoins/dapps and stable coins (Theter).

Interview Question 4

The next question that study participants received asked if they thought cryptocurrency aligned with one of the current asset classes. The responses to this question were mixed. Seventy three percent of the participants believed cryptocurrency aligned with a current asset class. Still, there were those that believed cryptocurrency did not align with a current asset class. Some of the participants responded that different cryptocurrencies aligned with different asset classes. Participants responded specifically by stating cryptocurrency aligned with commodities others

agreed it aligned with cash. A portion of the participants that believed cryptocurrency did not align with a current asset class believed cryptocurrency should be broke down into different sectors based on it trades. Additionally, those that did not agree that cryptocurrency aligned with current asset classes responded cryptocurrency should be in an asset class by itself and was necessary for future growth. Several responses generated yes or no answers. One of the cryptocurrency investors responded with:

No. It really is its own asset class that needs to be broken down into clear sectors based on how they trade; therefore the government hasn't come out with a strategy to regulate it. (personal communication, August 12, 2020).

A cryptocurrency miner stated:

Yes some coins align with cash equivalents, to a degree. However, it should be treated as store of value due to it erratic behavior. (personal communication, August 11, 2020)

Another participant that is a cryptocurrency trader and a cryptocurrency writer added:

No, cryptocurrencies are in a class by themselves. BTC is the first successful cryptocurrency (different than a digital version of a fiat currency) and many follow-on cryptocurrency projects were funded with a different kind of program (Initial Coin Offering, ICO). Many of the existing financial laws do not apply to cryptocurrencies.

A cryptocurrency investor replied:

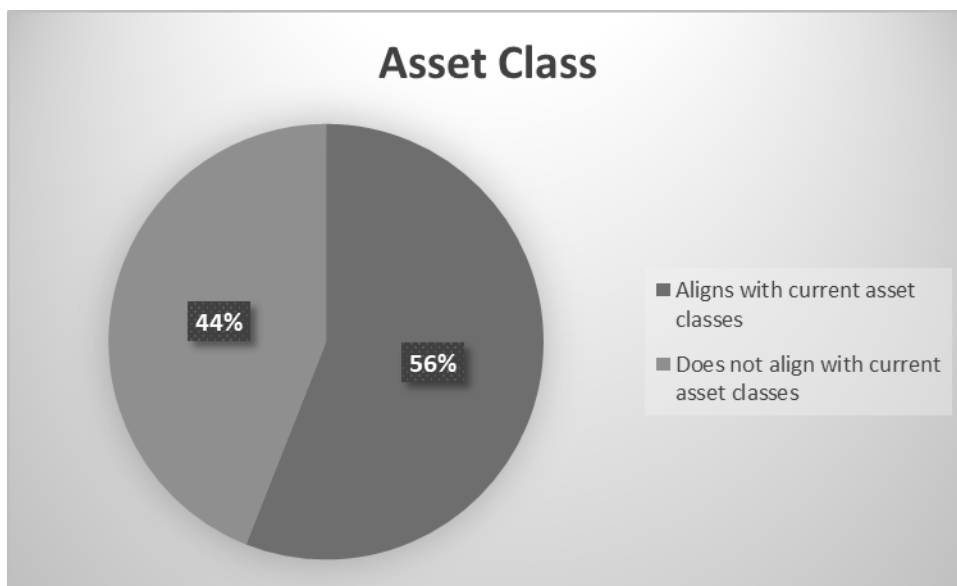
I think cryptocurrency could relate to the equity and commodity asset classes. Cryptos and stocks are both volatile and go through periods of high/low volatility. For instance, historically, October is a volatile month for equities. Like stocks, cryptos can be solely bought/sold on financial exchanges or you can take more risk and trade derivatives. Just like stocks, some cryptocurrencies are more speculative than others, but at the end of the

day, they both carry some sort of risk to owning them. Like stocks, crypto can be analyzed through technical analysis, which helps investors find potential price targets in the future, whether it be short-term or long-term. One could argue that there are different parts of market cycles where crypto currency is more attractive/ undesirable. The big difference is that it is hard to value a cryptocurrency because there are no fundamentals behind it. (personal communication, August 11, 2020)

The below chart summarizes the breakdown of current asset alignment amongst the participants.

Figure 5

Asset Class Alignment Breakdown



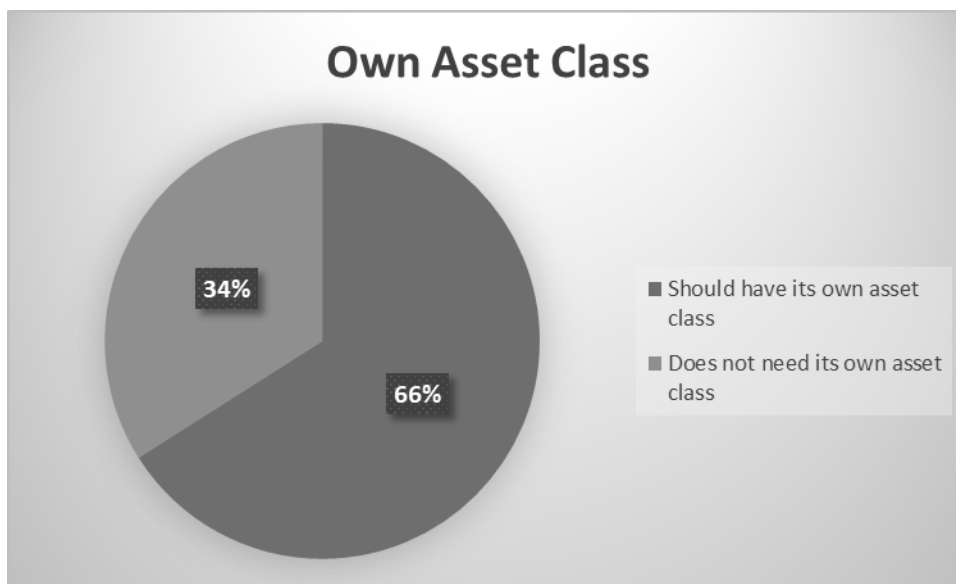
Interview Question 5

What are your thoughts about cryptocurrency as a separate asset class? This was the next question the study participants answered. Ironically, those that answered cryptocurrency aligned with a current asset class in the previous question answered cryptocurrency should have its own asset class. The majority of the participants stated cryptocurrency should have its own asset class. Eighty percent of the participants replied that it is needed. The answers on why it is needed

varied from portfolio allocation to better regulation by the government. Some participant responded with concerns that developing a specific asset class for cryptocurrency may lead to privacy issues amongst cryptocurrency investors. Some of the participants that agreed cryptocurrency should have its own asset class expressed concerns over the time it would take the government to accomplish this. Below is the breakdown of the responses on whether cryptocurrency should have its own asset class or not.

Figure 6

Own Asset Class Breakdown



A writer and crypto investor responded with:

By nature, it was designed to be a peer-to-peer currency, without third parties like banks or governments profiting from it, unlike fiat currency. It should not govern like other assets classes due to digital currency being created solely for the users and not to be taxed, or regulated. (personal communication, August 11, 2020)

While another writer replied:

We need new laws to help govern cryptocurrencies. Some laws can easily be applied but many regulators don't know how to apply them. Out of fear of being wrong, they simply deny approvals (SEC being a perfect example). Defining cryptocurrencies as their own asset class (to get rid of the confusion between calling them currencies versus an asset) would require Congress to better define applicable laws. (personal communication, August 9, 2020)

A cryptocurrency investor stated: "It could be doable in my opinion, but I think it would take along time due to government intervention and so forth" (personal communication, August 6, 2020).

A cryptocurrency investigator responded with:

This question is too broad, because common use of the word "cryptocurrency" is too broad. Ironically, a lot of the folks that may answer this question ("industry thought leaders", aka VCs, execs from generic blockchain firms) should be able to answer this question better than I would, since most or even all of what they deal in is transacting. I don't participate in the hustle-and-bustle of trading, OTC, allocations, ICOs, and that sort of thing, and that's the majority of the blockchain industry right now. Common use of cryptocurrency refers to assets like Bitcoin, Litecoin, and, arguably, Ethereum. Ethereum is 'arguably' since it's more utilized as infrastructure than Ethereum is utilized for payments (relative to other cryptocurrencies with such capabilities), even in these early adoption phases. I'd argue it depends on how one defines 'currency' -- most cryptocurrencies fit the fungibility and other aspects there. (personal communication, July 27, 2020)

Another investor answered:

I agree that indeed it is, and needs to be classified as such for clear portfolio investment and diversification; to help investors build a portfolio with appropriate asset allocation to improve the risk-adjusted returns. The asset class needs to be broken down into sectors based on how the specific cryptocurrencies trade. For example into commodities, platforms, privacy, exchanges, and stablecoins. (personal communication, August 15, 2020)

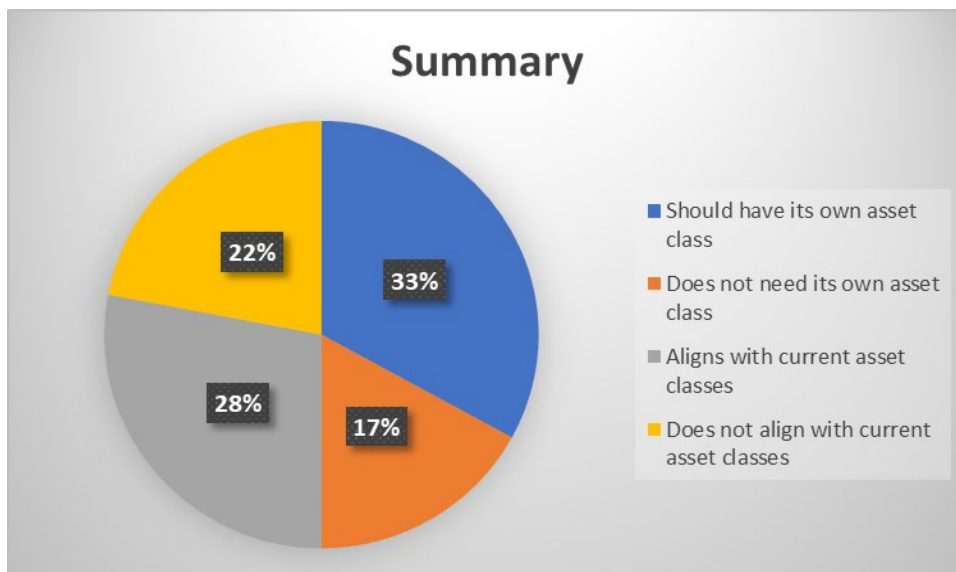
A Cryptocurrency Analyst stated:

Probably wise, but a lot of crypto is owned by people who would prefer not to disclose their investment. These are not people who need to make public disclosure of a balance sheet to indicate how much wealth they have accumulated. (personal communication, July 19, 2020)

The chart below is a summary of the participants' answers for research questions four and five.

Figure 7

Summary of Breakdowns of Asset Class Alignment and Separate Asset Class



Interview Question 6

The next question built off of the previous question and, more specifically, asked if the government can and should create a separate asset class for cryptocurrency. The majority of participants agreed the government should, but the majority agreed the government can but felt they would not. Participants responded that if the government created a separate asset class for cryptocurrency, then cryptocurrency would be more stable and less volatile. Earlier in this study, the researcher wrote of the volatility of cryptocurrency. Those that were opposed to the government creating a separate asset class for cryptocurrency did so because they believed it would stunt the growth of cryptocurrency.

One of the Cryptocurrency Advocates' replied: "Yes, most definitely to align with the unique nature of crypto" (personal communication, July 20, 2020).

Another Investor stated: "Yes, and they better do it fast if they want to be opportunistic and penalize all the investors and traders to collect their pretty penny" (personal communication, August 11, 2020).

A response from the participants involved in the legal side of cryptocurrency replied:

Can? I mean, in several senses, they already have. Look at tons of FinCEN guidance, or the SEC's definition on what is or is not a security for virtual assets, or...Should they? Absolutely, and they're behind the curve on doing so. They're making progress now, but it's a very late response. I've noticed this get a lot better in the past year, but the lack of clarity circa late 2017 let to a lot of confusion, as well as financially devastated people, from people with no place running a lemonade stand, let alone an ICO, exploiting the plausible deniability of "we followed the known rules." I would assess increased government interest (whether regulatory or law enforcement) in cryptocurrency as a

broad topic to be the best answer for formal definition of an asset class: government is well-aware, at this point, they can't just pretend cryptocurrency doesn't exist. I think they're well aware it isn't going away, they can't just make it completely illegal even if they wanted to, and they've had to face the reality of instead of burying their heads in the sand, they've got some catching up to do. Thankfully, this realization seems to have taken place. (personal communication, July 28, 2020)

A cryptocurrency investor and writer wrote:

Cryptocurrency is just a host of applications on the blockchain, I don't believe regulating specific applications over other applications can really work. It would just stunt the growth and the creativity for more use cases of the blockchain technology.

Interview Question 7

The follow-on question to that was “why you think the government has not created a separate asset class for cryptocurrency.” Some of the participants responded with the market was not big enough. Other participants responded that the government holds their own cryptocurrency and needs to gain control of it first. The responses varied quite a bit with this question. Some responded that the anonymity of investors was part of the reason and that cryptocurrency investors preferred to hide their identity. The majority of participants pointed to the lack of knowledge and fear that the government has of cryptocurrency.

A Cryptocurrency Investors replied: “Not large enough of a market at the moment. For any new concept it is better if it not regulated at first to allow it to further develop” (personal communication, July 30, 2020).

“I believe they want to have more control with their own cryptocurrency before assigning other cryptocurrencies” (personal communication, August 11, 2020).

Because they realize that some classes of ‘investors’ wish to hide their crypto ‘investment’” (personal communication, July 15, 2020).

“Two reasons which were already described: it wasn’t perceived to be as important of an issue, and ‘cryptocurrency’ is simply too broad of a definition” (personal communication, August 12, 2020)

A Cryptocurrency Miner responded:

- 1) The complexity of coming up with a good framework for how to think about crypto asset classes
- 2) Frankly I have no idea why it’s taking them so long, makes me think they are trying to delay the inevitable. Maybe the current physical currency will be threatened? Western Union will lose billions? So many theories.

A Cryptocurrency Enthusiast stated:

I view people in government positions as risk adverse. Crypto as a whole is probably the most volatile thing I’ve seen in my life. It is also hard to tell where the value of crypto comes from, there is no fundamentals to back it up. In my opinion, crypto moves solely based off of chart patterns. I think the government would view crypto as highly speculative. (personal conversation, July 29, 2020)

One of the Cryptocurrency Writers replied:

Governments, especially the U.S. with the dollar as the global reserve currency, are fearful of cryptos. They fear its privacy feature (although less than originally thought) and worry about illegal uses of the cryptocurrencies. The regulators also don’t have clear definitions of cryptos and they’ve been able to block a lot of progress, something governments are in no rush to change. (personal communication, August 12, 2020)

Interview Question 8

Participants were asked the pros and cons for classifying cryptocurrency as one of the current assets and the pros and cons of classifying cryptocurrency as its own asset. The overwhelming response of the participants for was the pros of cryptocurrency having its own asset class was growth. Reasons from participants mainly surrounded growth, cryptocurrency would grow faster with its own set of rules, being on the books, moving forward as a currency faster, more potential buyers, investment transactions, and a pro for the government. The cons were mainly taxation, the complication of taxation, the ability to tax, tax handling, and the lower profits.

One Cryptocurrency advocate simply stated: “I only see it as a pro for the government and cons for the users” (personal statement, August 12, 2020).

A Cryptocurrency Journalist replied:

Considering cryptos as a currency would enable investors to buy and sell as they would any other currency. That would simplify things since users would not need to worry about every transaction triggering a taxable event. But since BTC and other cryptos act more like volatile stocks, there’s a strong reason to consider cryptos as an asset like stocks. The difference of course is that I can use BTC like money whereas that’s not true for stocks. This is why a new asset class is needed, along with different tax handling rules. (personal communication, July 27, 2020)

Cryptocurrency Investors responded: “I see nothing but cons if cryptocurrency is to mean all virtual assets, Virtual assets should be categorized based upon the attributes of each virtual asset” (personal communication, August 12, 2020).

Pros:

We can move forward faster, get clarity on event taxation, and finally get our accountants trained to do our taxes right! More retailers and Investors will enter the space. And if governments are on the same page then all the exchanges will be legal to buy/trade on. As of now, lack of regulations make exchanges weary and they do not allow certain countries to log on; making it harder for typical retail trader to purchase cryptocurrency legally.

Cons: “I’m sure removing the slightly gray-area of taxation will most likely increase tax events” (personal communication, August 11, 2020).

Pros: “put it on the books more. Cons - can be complicated regulation” (personal communication, July 22, 2020)

Regulation

The next group of questions presented to the study participants related to regulation. Cryptocurrencies are often thought to operate out of the reach of national regulation, but in fact their valuations, transaction volumes and user bases react substantially to news about regulatory actions (Auer & Claessens, 2018). Part of the purpose of this qualitative study was to research the governments' inability to regulate cryptocurrency. The following three questions gather the participant's thoughts on regulation of cryptocurrency.

Interview Question 9

Participants for this qualitative study were then asked if they thought the government has a strategy or was working on a strategy to regulate cryptocurrency. The majority of the participants believe the government is already working on a strategy to regulate cryptocurrency. Participants also believe other countries are working on regulating cryptocurrency, which would force the United States government to develop regulation. Most participants feel the government

may have backed off their regulation strategy prior to the COVID pandemic, but feel now it is at the forefront.

Some of the cryptocurrency investors responded: “I think the government is developing a strategy to regulate cryptocurrency so people would feel more at ease to use them” (personal communication, August 11, 2020)

“Yes, I do believe they are (forced) to develop a strategy for regulating cryptocurrencies whether they like it or not. Especially once one or two other countries regulate it USA will play catch up quick” (personal communication, August 13, 2020).

“At one point they were interested, when they put bitcoin futures on the CME. I believe this was in 2017 when bitcoin was going parabolic to 20k. I feel as though they may have gotten scared once they saw it crash Dec. 2017” (personal communication, July 27, 2020).

The Cryptocurrency Fraud Investigator responded:

I would say they have a strategy, and something of a pulse (that still needs bolstered), and this is a huge improvement from 2017. It still needs some more momentum, but it is progress. I think that when those that do not and do not wish to understand cryptocurrency are made irrelevant, more productive dialogue on regulations will take place -- and more often. A prerequisite is phasing out the laggards and boomers (this isn't to espouse agism, but the precise type of individual that fostered the invention of the phrase “ok boomer” is demonstrated here) from these conversations. Brad Sherman is a great example of this, having demonstrated (consistently) a complete lack of knowledge about virtual assets. One may kick and scream all they wish, but blockchain technology isn't going away, nor is cryptocurrency -- adapt or perish. For every edgelord crypto-anarchist that wants to pretend Bitcoin is going to have a worldwide utopia of no

governments, there is an idiotic “leader” stating cryptocurrencies need to be banned in full. It is a balance, and when the dialogue has individuals with contextual knowledge and a sense of realistic pragmatism, we’ll progress. Until then, grab the popcorn. (personal communication, August 15, 2020)

A Cryptocurrency Investor and Blogger stated:

“The government is being forced to develop a strategy, and having a few pro-crypto representatives in Congress will help. But there’s a lot of foot-dragging since it’s a threat to the existing dollar and banking system” (personal communication, July 20, 2020).

Interview Question 10

Following up with the previous regulation question, the participants were asked how they believe the government will regulate cryptocurrency. The majority of the participants believe the regulation will be tax focus. The participants stated the government will find a way to regulate cryptocurrency to gain the taxes from the trading. Some of the participants thought the government may develop a separate exchange for the different cryptocurrencies and not add it to the current stock exchanges. Other participants believe the government will try to create a more bank like regulation which could drive cryptocurrency underground.

Cryptocurrency Investors responded:

“By creating more “bank-like” on and off ramps like Coinbase and others and tracking digital trails so the users can be taxed” (personal communication, July 22, 2020).

“They will have to list cryptos on an exchange. Maybe they make a new exchange for crypto currencies? I don’t think they would put cryptos in a stock index like the NASDAQ because they are not in the same asset class” (personal communication, August 11, 2020)

“IRS. Every event is taxed. Exchanges submit all events to IRS and they match it with your submitted tax docs” (personal communication, August 12, 2020).

One of the Cryptocurrency Writers stated:

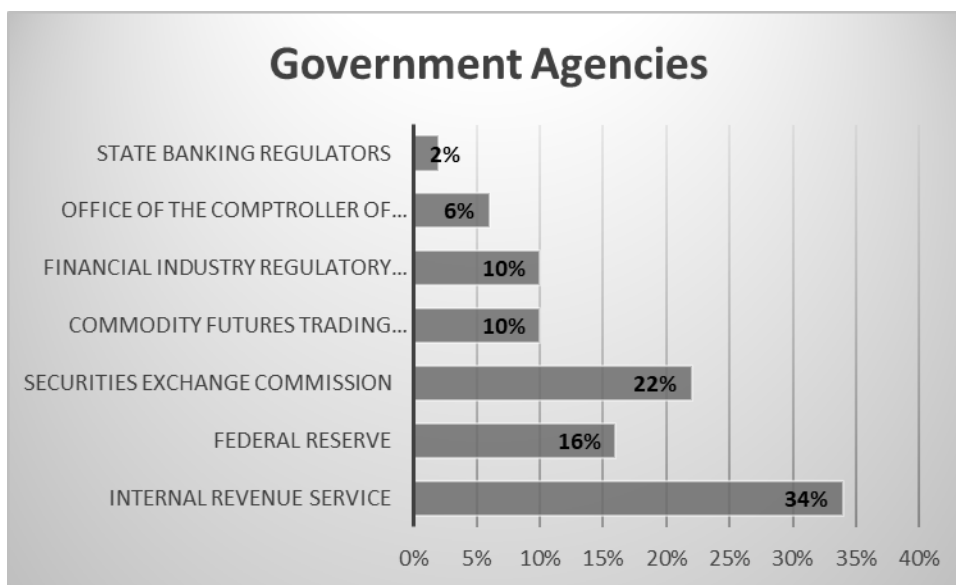
The government will be forced to accept cryptos but they’ll likely try to choke them to death with regulations. Some crypto activity could be driven underground but eventually, especially as more people begin using cryptos in place of the dollar (and the Fed loses control), the government will eventually have enough lawmakers to make the required changes. (personal communication, August 11, 2020)

A Cryptocurrency Legal Participant replied:

From the regulatory lens, we’re already seeing that. ICOs had rules put on them -- and, more importantly, enforced. Google the slew of SEC enforcement actions, especially in the past years. That’s already done. I see more regulation coming against a topic nearly never discussed: OTC/P2P transacting. This is due to the reality of laundering of funds from extremely serious incidents (exchange hacks, hard drugs like fentanyl, etc.) is often going through certain exchanges which myself and other investigators have identified as on/off-ramps for OTC traders. These OTC traders (some knowingly and some unknowingly) are profiting off proceeds of illicitly obtained virtual assets. What would those regulations be? Same stuff we see in other industries: one is expected to conduct source of funds, KYC, keep records, etc. The days of “someone I met on Telegram is selling me Bitcoin at 70% market rate, I don’t know who they are, but I’m just a day trader” are going to come to a crashing halt, and it’s my hope those individuals are held accountable too. (personal communication, July 20, 2020)

Interview Question 11

The last question the participants were asked was what government organization they believe would regulate cryptocurrency. Thirty four percent of the participants named the Internal Revenue Service (IRS) as the agency that would regulate cryptocurrency. Other government agencies were suggested; ten percent suggested the Financial Industry Regulatory Authority (FINRA), 22 percent recommended the United States Securities Exchange Commission (SEC), six percent proposed the Office of the Comptroller of the Currency (OCC), 16 percent suggested the Federal Reserve, and 10 percent thought the Commodities Futures Trading Commission (CFTC) should be the regulatory agency. Some participants believed the federal government may push regulation down to state banking regulators. The chart below represents a breakdown of the government agencies the qualitative study participants identified as potential regulators of cryptocurrency.

Figure 8*Government Agencies Breakdown*

One cryptocurrency participant responded:

Each and every one could potentially be involved, and based upon the nigh-endless potential applications for blockchain technology, they all should be! The obvious ones, already discussed, are regulatory bodies (SEC, CFTC) and law enforcement, but blockchain solutions will reach out and touch nearly every element of life. To narrow down oversight, even now, is an exercise in futility.

Additional comments were solicited, and the majority were more curious about the dissertation process. One of the additional comments are below.

One cryptocurrency enthusiast stated: “The adoption of cryptocurrency will be on the rise since everything is going digital due to the pandemic” (personal communication, August 12, 2020).

Summary

This qualitative study focused on the need for a separate asset class for cryptocurrency. Along this research journey, thoughts in favor of a separate asset class for cryptocurrency combined with thoughts against a separate asset class for cryptocurrency. Passion and conviction for cryptocurrency were prevalent throughout the discussions with research participants. Cryptocurrency to some, is a new and confusing technology, but to most of the research participants, cryptocurrency is an existing staple in our currency. Four research questions guided this research. These research questions laid the foundation and provided the foundation for the interview process. These questions initiated the engaging conversations had by the researcher and participants. The following are the answers and conclusions for these research questions.

Research Question 1. Does a new asset class need to be created for cryptocurrency?

Greer (1997) defined an asset class, as a set of assets that have economic resemblances with the other assets in the asset class and bear characteristics that make them different from other assets. Research participants agreed that cryptocurrency had resemblances with other assets

like commodities and cash. Currently, cryptocurrency is not part of an existing asset class, and to date, no consensus has been reached on their place within the conventional asset classes (Charfeddine et al., 2019). The consensus from the participants in this research study believed cryptocurrency aligned with current asset classes. This was a surprise and contrary to the responses anticipated by the researcher. Burniske and White (2017) asserted that an asset class must be sufficiently investable, providing liquidity and opportunity to invest. Research participants commented although very volatile, cryptocurrency was investable. Many of the research participants currently invest in cryptocurrency and provide cryptocurrency investment advice for clients.

Although some participants thought cryptocurrency should have its own asset class, they were the minority in the pool of responses from research participants. Bianchi (2017) pointed out that there is no significant relationship between cryptocurrency and traditional asset classes, and that cryptocurrencies cannot be considered a traditional asset class. Bianchi's thoughts were what the expected consensus from the interviewees was going to be but after the interviews it was the opposite. Those who responded that cryptocurrency aligned with other asset classes were then asked which specific asset class. The most popular answers were commodities and cash. Maginn et al. (2007) defined the most commonly used asset classes like equity, fixed income, commodities, real estate, hedge funds, and private equity. The summarized response to this question was no; a new asset class does not need to be created for cryptocurrency.

Research Question 2. Why has a consensus not been reached regarding the classification of cryptocurrency as an asset class such as currency, money, or an investment vehicle?

Bauer (2018) stated that no consensus to date has been reached that finds a place within conventional asset classes for cryptocurrency. Throughout the review of professional and

academic literature, consensus was not found on the classification of cryptocurrency. The data collected from research participants had plenty of thoughts on the asset classification of cryptocurrency but provided limited consensus. Ulyanova (2018) emphasized that lawyers, economists, and financiers have all had numerous discussions on the regulation of cryptocurrencies, but currently, there is no consensus on asset classification and regulation. The responses to this question were scattered, but a common theme did emerge.

The common views were the government is fearful of cryptocurrency, the government does not think the cryptocurrency market isn't big enough yet, and the most popular response was the government lacks understanding of cryptocurrency. US Senator Thomas Carper commented at the first ever Congressional hearing on bitcoin that "cryptocurrency has stimulated the imagination of some, struck fear in others, and confused the heck out of everyone else" (Homeland Security & Governmental Affairs full committee hearing, 2013, para. 3). Senator Carper's sentiments were almost a summary of the opinions of the research participants. The lack of understanding was elaborated on with observations discussing the lack of cryptocurrency knowledge in the Internal Revenue Service, the Department of Treasury, and the United States Securities Exchange Commission (SEC).

Responses included the lack of consensus stemmed from the government not appointing a single agency to oversee cryptocurrency. Low (2017) discussed the limited attention cryptocurrency asset classification has received and the challenges associated with regulating it like the other asset classes. The interview responses yielded less focused responses. The participants believed the lack of consensus was due to a lack of focus by one agency. The conclusion from this research question was a lack of understanding about cryptocurrency by the government is prohibiting a consensus. Stratiev (2018) attributed this to a lack of understanding

coupled with a lack of research, and by the time the regulation comes out, cryptocurrency may be obsolete.

Research Question 3. Which stakeholders would benefit, and which would lose if cryptocurrency is classified?

The overwhelming consensus was everyone, the government and people, would benefit from the classification of cryptocurrency. Frankenfield (2019) calculated the combined net worth of all cryptocurrencies is close to \$100 billion. According to the World Bank, this is equal to Morocco's (60th largest economy in the world) current GDP. \$100 billion, an amount as large as some country's economy, would be beneficial to any economy. The research participants discussed the benefits of cryptocurrency to the economy. The majority of the study participants look to generate some type of income from cryptocurrency. The majority earn a living working with cryptocurrency. The common factor in the interview discussions was growth would benefit the most if cryptocurrency is classified. Cryptocurrency would grow exponentially if given a specific asset classification.

Clarity on taxation and the ability to use cryptocurrency as currency were two of the biggest advantages pointed out by research participants. According to Suberg (2019), the Bank of England has declared that if they created their own cryptocurrency, it would generate a 3% growth in GDP. Some participants pointed out users would lose anonymity, which is one of the main attributes of cryptocurrency. With a small number advocating for the loss of anonymity as a con for cryptocurrency classification. Franco (2015) informed that all the user transactions are publicly visible and identified by the Bitcoin address, which serves as a pseudonym. This benefit may be the most attractive since Hempel and Lammerant (2015) stated misuse of personal data is prevalent by governments and big corporations. This was a minority opinion but still garnered

some discussion. The summarized solution from this research question was everyone would benefit.

Research Question 4. Does the United States government have a current strategy for regulating cryptocurrency?

The Treasury Department, according to Massad (2019), has issued a report on finances, fintech, and innovation that the Financial Stability Oversight Council has established a working group on digital assets and blockchain. Rzayeva (2019) said that currently there is no single strategy for the development of cryptocurrency in the world. The unanimity of the research participants on their response was surprising. The majority think the government is currently developing a strategy to regulate cryptocurrency. A small portion of participants indicated the government already has a strategy but has refrained from implementing it until absolutely necessary.

Some responses indicated the government was reluctantly developing a strategy or being forced to develop a strategy. The discussion was included which government agency would regulate cryptocurrency. The Internal Revenue Service was the most popular response but most participants stated that would need to be decided to complete a plan for regulation. Brainard (2018) articulated governance may need to evolve over time, but one thing that is clear is that strong governance arrangements will be required to provide the coordinated operational and financial risk management. The consensus was a strategy was being developed by the government to regulate cryptocurrency.

Applications to Professional Practice

Brainard (2018) believed that as the popularity of cryptocurrency grows, research like this study will become more prevalent. The findings of this qualitative study are relevant to

financial improvement. Research and discussions with study participants yielded a consensus that cryptocurrency does not need a separate asset class. This research study interviewed several cryptocurrency professionals which see cryptocurrency still functioning regardless of its classification. Although participants agreed cryptocurrency needs to be classified as an asset class, not doing so does not affect its value or usage. There are still advantages to cryptocurrency with a specific classification. With so many different uses, it is quite possible classification would hinder the growth of cryptocurrency. This thought could generate further research.

Cryptocurrency continues to gain popularity and has been used as a stable source of currency. People might use cryptocurrencies for quick payments and to avoid transaction fees (Federal Trade Commission, 2018). Robinhood is a trading app that has been around for approximately five years. This stock trading app attracted clients by making investing more accessible. The number one way that RobinHood changed how people invested is through the elimination of trading costs (Vercillo, 2020). Cryptocurrency has the potential to offer the same advantage, elimination of transaction fees.

Although a consensus has not been reached on which asset class cryptocurrency should be classified as, businesses involving cryptocurrency has increased. Just recently, PayPal announced the launching its own cryptocurrency service, allowing people to buy, hold, and sell digital currency on its site and applications (Alcorn, 2020). This is happening regardless of a consensus on asset classification of cryptocurrency. The efficiency, speed and resilience of cryptocurrencies give people financial inclusion and access advantages, said PayPal President and CEO Dan Schulman, who described the eventual shift from physical to digital currencies as "inevitable" (Alcorn, 2020). With this new service, customers will be able to use cryptocurrency to pay for items via PayPal. Bitcoin alone accounts for six billion dollars of daily online

transactions (Bulao, 2020). Bulao (2020) also pointed out between 2012 and 2020 Bitcoin grew 193,639%.

The data accumulated from the research participants stated everyone, including the government would benefit from classifying cryptocurrency into an existing asset class. Classifying cryptocurrency as a commodity was one of the more popular sentiments from the research participants. Vasilisin (2019) stated unlike traditional brokerage houses and banks, registration for crypto trading is substantially more straightforward. Vasilisin (2019) further elaborated banks and brokerage houses, as a rule, require high collaterals, deposits, and large trading volumes.

Central banks have decided to consider the idea of digital currencies like cryptocurrency. To evolve and pursue their public policy objectives in a digital world, Central Banks are actively researching the pros and cons of offering a digital currency to the public (a “general purpose” central bank digital currency; CBDC; Central Bank, 2020). Given that no solid consensus on regulation exists, this is a big step for the central bank to consider a digital currency. This research is prior to any regulation being established. Unlike decentralized cryptocurrency projects like Bitcoin, a CBDC would be centralized and regulated by a country's monetary authority (Seth, 2020). The issuance of digital currencies by the Central Bank would be considered a regulated cryptocurrency. Seth (2020) iterated these regulated cryptocurrencies are called Central Bank Digital Currencies and will be operated by the respective monetary authorities or central banks of a particular country.

Recommendations for Action

The results of this research study could potentially be of value to cryptocurrency traders and those working with cryptocurrency. The results of this study suggested that cryptocurrency

can function without being classified as a separate asset class. This study highlights that cryptocurrency is being used in multiple ways, regardless of asset classification. The research participants revealed cryptocurrency continues to grow in popularity and usage irrespective of regulation or classification

The storage of value is currently being used globally, mostly where currencies have lost value. As cryptocurrency evolves, cryptocurrency is being used in new ways and attracting more users. Cryptocurrency enthusiasts need to continue to use cryptocurrency, and the growth will increase as well as broaden. Consulting and Tax firm PricewaterhouseCoopers (2020) stated the cryptocurrency market would develop at a pace set by the key participants, characterized by likely growth spurts of legitimacy from one or more of these participants in what is called “credentialing moments.” One research participant stated during their interview that the legitimacy of cryptocurrency is in the eye of the beholder.

For the market to reach the next phase in its evolution toward mainstream acceptance and stable expansion, each of the five key market participants—merchants and consumers, tech developers, investors, financial institutions, and regulators—will play a role (PwC, 2020). The study by the Central Bank on the issuance of its own digital currency is a great start. Banks need to follow this study and continue to do their own research on cryptocurrency. Banks will need to accept cryptocurrency's potential as part of their stables of products and customer base.

With the Central Bank study of digital currency, the government needs to take a more aggressive approach towards regulation. Governments can no longer take the approach on the survival rate of cryptocurrency but more on cryptocurrency evolution. Governments need to monitor the evolution of cryptocurrency and become ready for their maturity.

Recommendations for Further Study

This qualitative study reduced the gap in research about cryptocurrency, but the research must continue. Continuous and further research needs to be done. With the constant evolution of cryptocurrency, the research needs to continue with it. The sample size of the research participants will be plentiful and should grow. With a growing research participant pool to choose from, data collection on cryptocurrency will be plentiful

The Central Bank's research on the issuance of digital currencies is a big step and must continue to evolve. This research will be a big step for bank involvement in digital currencies. Future studies on traditional banks' involvement in cryptocurrency are necessary. Be prepared for a significant banking transition during the early 2020s: it is time to adopt cryptocurrencies (Mogul et al., 2020). For banks to be prepared, continued research is necessary. Financial institutions that educate themselves now, and introduce well-designed experiments and offerings, will be in a good position to lead the industry in their regions or even worldwide (Mogul et al., 2020).

Asset classification of cryptocurrency should be further researched. As cryptocurrency grows, the need to assign or designate it as a particular asset class will be needed. Mogul et al. (2020) argued some financial services leaders remain skeptical of the value that cryptocurrency has as an asset class, and individual cryptocurrencies have lost market capitalization at times (including this year). Skepticism would be mitigated with research. The more study conducted on this topic, the clearer the vision of cryptocurrency asset classification will be. The future of cryptocurrency can potentially provide a global currency that President Roosevelt had directed Secretary of Treasury, Henry Morgenthau Jr., to develop plans for. To have a global currency will require more research on what type of asset cryptocurrency is.

Research on regulation needs to progress and evolve; additional research is required for this to happen. This research has to be continuous and ongoing because of the constant evolution of cryptocurrency. Agencies have the potential to create a digital currency, token, or coin to conduct research. Burchardi et al. (2020) suggested creating a digital and regulatory sandbox to experiment with promising use cases. Well-written use case narratives (or simply "use cases") offer the analysis, development, and testing teams an invaluable guidebook (Goss, 2007). Use cases will provide governments the opportunity to test out different scenarios involving cryptocurrency. Based on their strategic analyses, leaders should identify two or three high-potential initiatives and begin small-scale pilots, such as developing an asset-backed stablecoin or collaborating on a central bank digital currency.

Reflections

I chose to research cryptocurrency and focus my dissertation research on classification and governance of cryptocurrency because of my fascination with finance. The evolution of currency, banking, regulation, and finance is of great interest to me and also what my career has revolved around. I think cryptocurrency represents the next phase of currency, just like barter went to money, as gold went to paper, and paper went to plastic. My goal of this research was to help fill the gap in the lack of research conducted on cryptocurrency.

Initially, I found several notions that cryptocurrency was a passing fad, a new technology for young people, and an unsustainable dream. There were concerns about finding enough data to provide for a substantial research study. Additional considerations about finding a large enough pool of research participants could give educated and thoughtful data for this research study. The collection was challenging to find and accumulate, but the individuals that participated in this study provided invaluable data, thoughts, passion, and wonderful conversations.

Finding the biblical connection to this research was challenging. Researching cryptocurrency and the bible yielded mainly discussions about cryptocurrency being the Mark of the Beast. This consistent analysis was unsettling and required deeper research. Warnings of losing yourself in bitcoin, tied with Timothy 6:10: For the love of money is the root of all evil: which while some coveted after, they have erred from the faith, and pierced themselves through with many sorrows (Bible, n.d.). The bible does not mention bitcoin or cryptocurrency, but one can tie it to verses within the bible. Harrington (2020) stated in a few decades time – maybe even a few years – the whole world will be transacting in this way and no one will be able to buy or sell anything without this “Mark of the Beast.” I see it quite differently and more of a way to bring the world together as one. I see the potential for sharing the wealth across the world and bring methods of payment to areas without.

Summary and Study Conclusions

This qualitative research study focused on the asset classification of cryptocurrency. I went into this study with the assumption cryptocurrency needed a separate asset class, and my research would define why. I found that cryptocurrency has had substantial growth, beyond the wildest of expectations, without any consensus on classification. Through my research participants, I found that growth was emerging on its own, and the classification was not a priority to sustain this growth. Currently, central banks have taken notice of this growth and started their own research.

Governments’ are still lacking consensus on cryptocurrency. The differences in opinions, rules, and regulations vary from country to country. The advancements from one country to another are vast, with some countries are at the forefront of cryptocurrency and others lack simple acknowledgment. Governance consensus may never happen, but the Central Bank’s

commitment to researching cryptocurrency is a good sign. More educated leaders, finance professionals, and users will continue the growth of cryptocurrency and with growth will come regulation and classification.

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Appendix A: Interview Guide

Wayne Durr Dissertation Interview Guide

Date:

Time of Interview:

Place:

Interviewer: Wayne Durr

Interviewee:

The purpose of this qualitative case study is to explore the lack of consensus regarding classification of cryptocurrency as a new asset class and the inability of governments to regulate it. This qualitative research will discuss the positive and negative effects for stakeholders if cryptocurrency is classified as its own asset class. This case study will discuss the governments' ability to classify cryptocurrency as an asset and explore current regulatory strategies by the United States government. This study will describe the reasons for regulating cryptocurrencies as similar to those for other financial assets and which government agencies would potentially be the regulating authority.

Interview Questions

Background

IQ1. What is your background with cryptocurrency?

IQ2. Do you own cryptocurrency?

Asset Class

IQ3. Are you familiar with the current asset classes?

IQ4. Do you think cryptocurrency aligns with one of the current asset classes?

IQ5. What are your thoughts about cryptocurrency as a separate asset class?

IQ6. Can and should the government create a separate asset class for cryptocurrency?

IQ7. Why do you think the government hasn't created a separate asset class for cryptocurrency?

Q8. What pros and cons do you see for classifying cryptocurrency as one of the current assets? As its own asset?

Regulation

IQ9. Do you feel the government has a strategy or is developing a strategy to regulate cryptocurrency?

IQ10. In your opinion, how will the government regulate cryptocurrency?

IQ11. What government agencies would be involved in the regulation of cryptocurrency?

Additional comments: