Governments' Adoption of Native Cryptocurrency: A Case Study of Iran, Russia, and Venezuela

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GOVERNMENTS' ADOPTION OF NATIVE CRYPTOCURRENCY: A CASE STUDY OF IRAN, RUSSIA, AND VENEZUELA

by

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Abstract

The emergence of digital currency is becoming prevalent in the age of globalization – specifically, cryptocurrencies. Cryptocurrencies and blockchain are two recently discovered concepts currently being explored by researchers and developers. Cryptocurrency is a subset of digital currency that encompasses revolutionary technology, shifting political and economic spheres in nation-states. Certain governments are more prone to the adoption of cryptocurrencies and three comparative case study countries, Iran, Russia, and Venezuela, have shared attributes that result in adoption. Observed factors that result in the adoption of cryptocurrencies include corruption, GDP level, economic volatility, and Western sanctions. These factors will be applied in the case study countries to determine whether this results in the adoption of native government-backed cryptocurrency.

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INTRODUCTION:

The purpose of this paper will analyze whether kleptocratic regimes share common attributes, resulting in the adoption of native government-backed cryptocurrency. This thesis will focus on three developing countries that are resource-rich, struggle with hyperinflation, and have experienced U.S. sanctions: Iran, Russia, and Venezuela. Their governments have expressed an interest in cryptocurrencies, the first global currencies that are decentralized, through groundbreaking and revolutionary technology that facilitates non-traditional currency transactions at a rapid pace. The celerity and originality of these new currencies may make them quite attractive to governments that feel constrained or short changed by established, traditional currency markets and mechanisms.

This thesis seeks to assess if cryptocurrency adoption by national governments is most likely to occur in states run by kleptocratic regimes, and experiencing well established challenges to their currency systems, such as U.S. sanctions, economic volatility and the weight of a "resource curse" (resource rich countries).

Proceeding, it is imperative to define kleptocracy and cryptocurrency, as central topics of this thesis, followed by the literature review, and stated hypotheses. Subsequent to the literature review will be the methodology section testing the hypotheses via methods of agreement and three case study countries: Iran, Russia, and Venezuela. A case study overview highlighting shared attributes will be provided, along with the concluding main findings and implications necessary for future research.

Kleptocracy and Cryptocurrency: Some Important Distinctions and Definitions

Several of the concepts explored in this thesis are rather complex, or pertain to recent innovations in the areas of technology, banking and finance. Their impact can be found in numerous policy areas, as well as economic and political realities. This is why, at the very beginning of this thesis, even before reviewing the literature, this thesis seeks to offer definitions and descriptions of such concepts and briefly discuss their impact.

Some resource-rich countries suffer from copious amounts of political corruption, as wealth is concentrated in the hands of the few elites. According to Rindborg (2018), political kleptocracy is a corrupt form of government that "rules by theft," obstructs growth, and uses power to exploit the states' resources to extend the personal wealth of those in power. Kleptocracy and corruption go hand in hand, as both seek to illegally maximize the welfare of rulers and political leaders. Defining political corruption is an arduous task due to conflicting interpretations; however, for the purpose of this paper, political corruption is defined as the misuse of power to fulfill individualistic goals with the intentions of acquiring greater power and wealth (Tanzi, 2013). In resource-rich countries, kleptocratic governments are resource cursed, meaning, countries with large economic potential centered around natural resources are more likely to have discrepancies and corruption in public expenditures (Rindborg, 2018). Economic and fiscal reliance on resources, such as natural gas, petroleum, or minerals, increases economic volatility while helping perpetuate authoritarian and kleptocratic regimes to increase the power of state bureaucracy. Resource-rich countries can enjoy the luxury of minimal taxation but with the opportunity cost of representation. Minimal representation allows the state to exploit behind

closed doors, increasing the chances of corruption, allocating absolute control in the hands of the kleptocracy. (Haber & Menaldo, 2011). High levels of corruption and mismanagement of assets that generate revenue can detrimentally impact a country's economy, resulting in widespread political instability. Outbreak of political instability occurs when a country's economy experiences high volatility and lack of investment in the well-being of citizens and country, despite the substantial revenue earned. Rather, this money is delegated to personal and private sectors that benefit the regime's agenda. Countries with corrupt political and economic systems usually lack transparency, shattering the public's trust in their governmental system (Tanzi, pg. 43, 2013).

Kleptocratic regimes devalue domestic currency in efforts to halt the staggering hyperinflation occurring. Hyperinflation is high monetary inflation in which commodities and necessities become too expensive for citizens to afford. Regimes print an excess of money to relinquish themselves from astronomically high amounts of debt without realizing the economic consequences. The printing of excess money raises the prices of goods, commodities, and minimum wage to compensate for the amount of money floating in the economy. Consequently, Milton Friedman, a well-known economist, explained the value of currency dilutes when "too much money chases too few goods" (Duesenberry, pg. 144, 1950). Purchasing power is the amount of goods that currency can purchase, leads to innumerable economic distresses, as seen in kleptocratic countries. Hyperinflation destroys a currency's purchasing power relative to the dollar, and Western sanctions accelerates the downward economic spiral.

Cryptocurrencies are a subset of digital currencies that revolutionize traditional fiat systems with centralized authorization. Cryptocurrencies are decentralized, meaning, no one entity can control or manipulate the market. The ownership of each transaction is approved cryptographically by other nodes in the network system, forming the Distributed Ledger Technology (DLT), known as the Blockchain (Appelbaum, 2018). For the purposes of this paper, it is essential to differentiate public and private blockchains. Public blockchain ensures the ability to trace the history and application, making it impossible to commit fraud, manipulation, and corruption; this may increase trust in the system. Due to the transparency and high efficiency of public blockchain, each transaction is recorded and validated by multiple stakeholders which limits corruption and manipulation in nation-states (Appelbaum, 2018). Private blockchain is a similar concept to public blockchain in the peer-to-peer transactions and consensus chain of blocks, however, a major distinguishing factor is permission entrance (Appelbaum, 2018). Unlike a public blockchain that has public transparency and accessibility to the ledger, private blockchain requires permission for the distributed ledger to be visible to those invited. Therefore, transactions are censored and can only be visible to the group. Private blockchains have authorization to monitor all transactions made by the public, strengthening kleptocratic powers. This allocates power in the hands of those invited into the blockchain, allowing further room for corruption (Appelbaum, 2018). Native cryptocurrencies run on a private blockchain because these are not a global currency that can be adopted by all nations. The correct and intended purpose of blockchain was to publicly expose corruption, eliminate opportunities of future corruption, and foster a more efficient system. However, kleptocracies manipulate the intended purpose of blockchain by privatizing and committing illicit conduct in efforts to strengthen their

ruling elite. Kleptocracies that develop native cryptocurrencies will run under a private blockchain, resulting in expansion of powers and greater control over the people (Konowicz, 2018).

The Role of Economic Sanctions on Cryptocurrency:

Sanctions were designed to exert influence beyond borders by threatening or punishing countries for not carrying out desired actions. Sanctions involve two parties: the sender and target, in which, the sender threatens the target by imposing measures that produce negative results (Eaton & Engers, 1999). Common forms of sanctions include economic, military, and diplomatic sanctions. This thesis will specifically assess economic sanctions imposed by Western allies– the United States and European Union. Economic sanctions are defined as penalties imposed on a targeted economy in various forms, such as restrictions on financial transactions, trade barriers, or tariffs. Economic sanctions places immense pressure on the targeted country without the sender resorting to military force (Drury, 1998). Western sanctions (economic) prohibit commercial activity by blocking transactions between countries and businesses, limiting international trade, with intentions of isolating the targeted economy. Sanctions can also contribute to lower levels of economic growth.

The purpose of Western sanctions is to force kleptocratic countries to demonstrate acceptable political conduct and comply with Western standards. The United States inflicts sanctions on kleptocratic countries which have committed or broken various international laws, such as Russia's territorial invasion of Crimea or Venezuela's human rights violations. By imposing sanctions, the United States aims to produce a favorable outcome, seen with Iran's lack

of cooperation with nuclear non-proliferation agreements (Konowicz, 2018). Iran's sanctioned economy rapidly declined and in exchange of lifting economic sanctions, the regime eventually signed the Nuclear Deal. It is important to address Iran, Russia, and Venezuela have continuous sanctions imposed by the United States and European Union (Western allies).

Western Sanctions allow the United States to push economic agendas of preserving the most powerful global currency; the dollar. The United States is the international financial hegemon and "depreciation of currency," the loss of currency value, is commonly measured relative to the dollar. More money is needed to purchase one U.S. dollar and countries that rely on importation of goods (case study countries) must convert their currency to the U.S. dollar before transactions, resulting in expensive imports. Western sanctions can contribute to depreciating currency by ending financial and economic ties, lowering international demand. Consequently, foreign investors will not invest in a sanctioned economy, further lowering demand and lost faith in domestic currency. Any country not a part of the World Bank consequently suffers economic hardships such as a less integrated economy and is forced to find alternative options (Konowicz, 2018). As a result of currency depreciation and inflation, prices of commodities and necessities can skyrocket, growing poverty rates within the population. Currency depreciation worsened by inflation and Western sanctions raises economic inconveniences towards power-hungry regimes.

Cryptocurrencies offers an alternative option of international integration through increased cyber capabilities and cryptographic technology. Governments are incentivized to create native cryptocurrencies to bolster the economy from inflation, depreciating currency, and

economic sanctions. The technology that encompasses cryptocurrencies are decentralized and the United States lacks jurisdiction or control over this market. Thus, countries are liberated from Western influence and enjoy opportunities of efficient trading without exchange rate fees. Cryptocurrencies is not relative to the U.S. dollar and conversion is not needed before international transactions. Additionally, native cryptocurrencies can push personal agendas of kleptocracies through the private blockchain, only accessible to the government (and invited authorities). This enhances corruption and allows kleptocracies to continue expanding power (Button, 2018).

LITERATURE REVIEW:

The literature seems to suggest that cryptocurrencies thrive in politically unstable countries that meet certain conditions: inflation, high economic volatility, and Western sanctions. These conditions also seem to be prevalent in resource-rich countries with kleptocratic regimes in power. Kleptocracies have extractive economies which Acmoglu & Robinson (2012) defines as a small group of individuals controlling the domestic market in efforts to exploit the population. This is especially true in kleptocracies, as their institutions are all extractive and lack inclusiveness. Acmoglu & Robinson conclude that economic prosperity is established primarily in inclusive institutions where many people are involved in governing. Inclusive economies foster technology innovation and education by encouraging participation amongst the population and utilizing talent. On the other hand, extractive economies extract wealth from one subset of society to benefit another. Extractive economies elites are fully controlling all sectors of the state, restraining free market growth, limiting public participation, and facilitating increased levels of corruption. Extractive institutions are the powerhouse of logics – they can limit production and distribute it directly in the hands of the elite. Kleptocratic regimes with extractive economies abundant in resources are known as "resource cursed."

According to Hausmann & Rigobon (2003), resource rich countries display a pattern of having lower purchasing power parity due to inflation and sanctions. The resource curse is a theory that rationalizes countries with high abundance in natural resources having less opportunities for economic growth and democratic governance. The primal cause of underdevelopment in abundantly rich countries is the "dysfunctional" state behavior that passes

policies, which inevitably fail (Robinson, 2006). In resource-rich countries, political instability occurs when such "dysfunctional" state policies are enforced, leading to mismanagement of resources and plummeting prices, therefore, hurting the economy.

Rindborg and Hirschkorn (2018) both agree an important concept associated with resource-rich states is high economic volatility. In resource-rich countries with kleptocratic regimes, volatility creates instability attributable to high dependency on resources and the lack of economic diversification (Rindborg, 2018). For example, Venezuela used to be one of the wealthiest nations before the 1980s due to the rising oil prices. After the 1980s with the oil crises, Venezuela's volatile economy fell with the oil prices as well. This is exemplified in most countries relying on resources that account for a large sector of the economy – hence, a decline in oil prices means the economy will suffer. Resource rich countries lack economic diversification in other sectors, which consequently causes an economy to become more volatile to market fluctuations.

According to Hirschkorn (2018), cryptocurrencies offer a good chance at curing high economic volatility and enhance nation-states' ability to break away from traditional systems without compromising security or legitimacy, but rather, increasing traceability and transparency. Another contributing factor that deters the economy is mismanagement of resources, executed by the elites for corrupt intentions, which creates an inefficient economy (Lanksy, 2018). Dadgar and Nazari (2012) concluded most oil-producing countries are involved in economic corruption and described the foundations of economic corruption; the more transparent an economy is, the fewer opportunities for corruption.

To limit corruption, increasing the number of political parties and non-government organizations allow disclosure of governments actions. Dadgar and Nazari show that economic corruption can be combated through transparency and institutions that can function effectively. However, limiting economic corruption in kleptocracies is arduous to attain. Especially if the kleptocratic authority has supremacy over all state resources, severely limiting the possibility for a transparent and inclusive economy. Viglione (2015) concludes cryptocurrencies allow greater economic freedom because of their decentralized nature and peer-to-peer transactions. Viglione (2015) claims that citizens living under highly repressed economies that experience limited freedom, limited political participation, high trade barriers, and inflation, tend to transmit funds into cryptocurrencies to maintain the current value of money. Governments fighting Western sanctions find cryptocurrencies appealing, as they open more opportunities for economic trade globally. Viglione's (2015) statistics on Russia and Venezuela reveal both countries have relatively low economic investment and financial freedom, which explains their prompt adoption of cryptocurrencies.

Inflation can prompt countries to issue government-backed cryptocurrencies in efforts to bolster the economy. There are numerous reasons as to why inflation occurs in developing countries, such as demand-pull inflation, cost-push inflation, and built-in inflation. Inflation is defined as the quantitative measure of prices that increase over a period of time, resulting in a decrease in purchasing power of that currency (Gali & Gertler). Inflation is controlled by the central bank which seeks to keep inflation rates within permissible boundaries, as not to harm the economy. According to Samimi & Jamshidbaygi (2011), there is a positive relationship between government deficit and inflation.

In the case of Iran, a text book example, inflation increases nominal government expenditure faster than revenue readily available. More money allocated on expenditure results in higher budget deficit – in efforts to compensate, excess of money supply is printed which drives inflationary rates higher. Excess of money supply and surging prices for consumer goods are catalysts for hyperinflation. Weisbrot (2008) argues inflation can be exceptionally higher in resource-rich countries (like Iran, for example) due to high economic volatility and the lack of domesticated products, which causes regimes to rely on imports of food and consumer goods. Reliance on imports from countries with stronger currencies may also hike up inflation rates domestically, as it increases deficits.

Zimbabwe's currency, which is currently the weakest internationally, is comparable to the Iranian rial or Venezuelan bolivar. These countries all experience a depreciation in the value of national currency, associated with the resource curse, increased imports, and trade balance deficits (Lanksy, 2018). Such attributes economies face pressurizes kleptocrats for economic reform, but erratic state behavior along with limitation of investment and international trade capabilities makes reform an arduous task. Thus, cryptocurrencies become a viable solution that encompasses digital currency and cyber security capabilities while steering away from the United States banking system. It is important to note certain publicized cryptocurrencies are immune to hyperinflation whereas native cryptocurrencies can be inflated in the hands of kleptocratic regimes that manipulate for self-serving purposes (Appelbaum, 2018).

Western sanctions are another characteristic that can prompt the development of native cryptocurrencies. Considering some countries have an unstable economic system with inflation

and devalued currency, sanctions intensify these symptoms, forcing governments to find alternative cures to alleviate the epidemic. Most sanctions imposed have the intention to put pressure on another nation to comply with Western ideology. In the long run, this policymaking and stigma resorting to sanctions undermines the intended purpose of enforcing them in the first place. Kleptocratic regimes are coerced into finding an alternative solution to ensure their surviving reign. The solution of cryptocurrencies surfaces because this decentralized phenomenon questions the power of the dollar.

Konowicz (2018) infers kleptocratic regimes are more likely to engage in digital currency theft due to their preexisting criminal enterprise behavior. Cryptocurrencies have the ability to cheat sanctions in four possible ways: First, state controlled cyber activities of stealing digital currencies is possible, especially in Russia, whose advanced cyber capabilities allows it to potentially access cryptocurrencies through cyber hacking (Konowicz, pg. 7, 2018). Next, countries are experimenting with cryptocurrency mining, which is a process through which transactions are verified and added to the blockchain digital ledger. Russia recently announced they are negotiating a sale of energy to 70 Bitcoin-mining companies – this is proof that Russia has initiated the development of native government-backed cryptocurrency (Konowicz, pg. 9, 2018). Third, national cryptocurrency backed by resources is another solution that gives countries financial independence from the U.S. sanctions. Venezuela has undertaken this project by establishing the first native cryptocurrency backed by petroleum. Finally, multiple states are coupling to form a common cryptocurrency, resembling an alliance-like relationship. Countries with U.S. sanctions in place, such as Russia and China, will merge to use one cryptocurrency known as BRICSCoin in efforts to decimate U.S. influence throughout the international

economy. There is a basic framework to make this transformation and alliance, however, much work is needed to solidify such an ambitious plan (Konowicz, 2018).

The accumulation of sources revealed the complexity behind kleptocratic regimes and the series of economic hardships due to erratic state behavior. Each action committed by kleptocratic regimes and the subsequent consequences are interchangeably related and interwoven. I highlight these factors as attributes: resource-rich countries, high amounts of corruption, lower GDP, economic volatility, and Western sanctions. The shared attributes potentially resulting in the adoption of cryptocurrency will be further explored in the methodology section.

Kleptocracy has uniform characteristics and policies that are commonly noticeable throughout various countries. The elite exploits resources, through acts of embezzlement or mismanagement, which creates political and economic corruption. Corrupt governments lose legitimacy because the public loses trust and may challenge authority. Elites flaunt their power by maintaining strong military control of the population –if people continue challenging the supreme authority, this is an act of defiance and persecution will immediately follow. This authoritarian approach to power causes widespread political and economic instability. Aside from the resource curse defined earlier, poor policymaking, such as printing excess money or exporting petroleum for cheap, drives the economy to hyperinflation. The most prominent attempt to limit hyperinflation is devaluing the currency or simply creating another. In efforts to combat these economic hardships, governments are experimenting with developing native cryptocurrencies. Native cryptocurrencies will allow governments to dodge brutal effects of U.S. sanctions by allowing greater economic freedom and less trade restrictions, while still retaining

control over the population. Developing a native cryptocurrency that runs on a private blockchain, which primarily functions by invite only, will allow kleptocracies to continue exploitation of resources but not visible to the public. Though the nature of blockchain is made to be publicized and transparent to all, kleptocratic regimes will manipulate and privatize in efforts to retain wealth and keep power allocated in the hands of those invited.

HYPOTHESIS:

Based on the reviewed literature, resource-rich kleptocracies with common attributes, such as high levels of corruption, low levels of economic growth, high economic volatility, facing Western sanctions, traumatic economic prospects, devalued currencies and inflation, share a common outcome: the adoption of native government-backed cryptocurrencies.

METHODOLOGY

A complex statistical analysis would be most adept at determining the relationship between the factors identified above, which would typically be classified as dependent variable (adoption of cryptocurrencies) and independent variables (Western sanctions, economic volatility, resource curse, low GDP, high levels of corruption). But, given the limited time and resources available for this study, I only focus on the adoption of cryptocurrencies in three countries (Russia, Iran and Venezuela). Therefore, the number of cases is small, as well as the number of observations, and a statistical analysis, even as simple as a correlation analysis, would not be feasible or relevant here. Hence, the method of choice here will be Mill's method of agreement, where typical independent variables are called "attributes" and the dependent variable is an "outcome", and we seek to determine if several attributes, if shared in several cases, lead to the same outcome, implying a possible correlation, if not outright causality.

The methodology of this thesis seeks to assess whether these common attributes within Iran, Russia, and Venezuela could result in the shared outcome of adoption of cryptocurrency. In doing so, some challenges will arise due to the novelty of the subject matter and to limited information made available by the governments observed here and will be described below.

The adoption of native cryptocurrency is likely in countries with high volatility, because this circumvents market vulnerability to international fluctuations while promising greater stability to the economy. Resource-rich economies are typically unstable due to high levels of corruption, resulting in lower economic growth and GDP, with increased dependency on natural resources. Resource-rich countries by nature face higher levels of economic volatility because

the lack of economic diversification, and if done correctly, native cryptocurrencies backed by assets, such as oil, can theoretically lower volatility. The impact of Western sanctions can be the final push that incentivizes governments to create native cryptocurrencies. Native cryptocurrencies allow kleptocracies to bypass imposed sanctions and embargoes in efforts to keep the economy afloat and become independent from the United States, while still centralizing power. Governments' transition to blockchain technology and further adoption of cryptocurrency has not yet been researched in depth. Blockchain is a revolutionary technology without precedent history, therefore, making it challenging to assess. Thus, this study faced hurdles when researching transaction volume in governments and overall data in these countries. Also, high levels of corruption, bribery, and lack of transparency result in unreliable and tampered data.

I have operationalized each attribute as follows. Higher levels of corruption may result in the adoption of native cryptocurrency, hence, I quantified kleptocracy on an international scale. I studied the Corruption Perception Index (2018) - in the three countries I study. They were ranked on a scale from 0 to 100 based on public perception of corruption, 0 being the most corrupt and 100 being clean. Additionally, I utilized the Economic Freedom Index and Human Freedom Index, which operates on the same scale described above, to further measure kleptocracy. I measured Gross Domestic Product, GDP, using the World Bank with the expectation all three countries have lower GDP's than other developing countries due to high amounts of corruption. In this paper, I will examine economic growth in terms of GDP annual growth, hence, if the countries display negative percentages of growth, this will define lower levels of economic growth. Alongside GDP, I will examine hyperinflation as consumer prices raising more than 50% a month. When receiving data from the World Bank, if export revenue in natural resources,

such as gas or petroleum, comprises over 50%, I did classify the country as economically dependent on one main resource. Another critical component in my analysis is Western sanctions. Embargoes and sanctions on resource-rich countries limit trading interactions internationally, which accounts for a lower GDP. Thus, there is a potential relationship between Western sanctions and the depreciation of domestic currency, which will be discussed below. After Western sanctions had been in place for a while, I have measured if the domestic currency has gradually inflated, deflated, or remained the same. Table 1 summarizes attributes based on the literature review and the methods of measurement that will test for common attributes in case study countries.

Table 1: Main Attributes Based on Literature Review		
Attributes	**Definition**	**Measurement**
Kleptocracy	Corrupt form of government that "rules by theft"	Economic Freedom, Human Freedom Index, Corruption Perception Index
Corruption	Misuse of power to fulfill individualistic goals to acquire greater power	Corruption Perception Index
Resource-rich capabilities	Based on oil/natural gas	CIA Factbook
GDP	Total value of goods produced annually	World Bank
Economic Volatility	Vulnerability to international fluctuations possibly due to lack of economic diversification	Export revenue exceeding 50% classified as economically dependent, measuring depreciation of currency, and inflation
Western sanctions	United States and European Union imposing economic sanctions: penalties imposed on economy to produce desired outcome	U.S. and EU sanctions on case study countries

Table 1: Main Attributes Based on Literature Review

Figure 1: Outcome Based on Literature Review

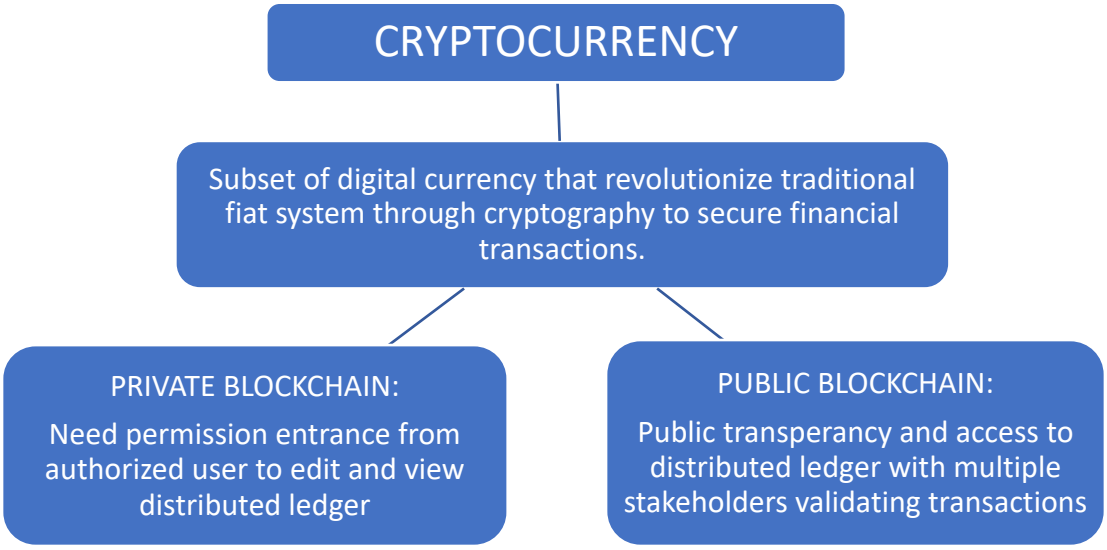


Figure 1: Outcome Based on Literature Review

Figure 1 summarizes the potential outcome of the displayed attributes (Table 1) – the adoption of cryptocurrency. This flow chart explains important concepts, including the definition and two forms of blockchain, based on the literature review.

In order to best assess the realities that led to the adoption of cryptocurrencies in the three countries, I have conducted detailed case studies of each. I will present these case studies next, followed by a comparative study of the three, based on the method of agreement.

COMPARATIVE CASE STUDY COUNTRIES

Case Study Selection

The adoption of cryptocurrencies can foster inclusiveness through increased transparency or manipulation to further corruption. I sought to analyze why countries adopt cryptocurrencies; upon researching, similar characteristics were shared in countries, which captured my initial interest. Specifically, countries that are currently developing cryptocurrencies with complex kleptocratic regimes that are resource-rich. Three countries with well-known kleptocracies were chosen to analyze interest in cryptocurrencies. Other countries have formal adoption of cryptocurrencies including Estonia, Thailand, and Marshall Islands. However, I selected countries currently undergoing development with limited research that could pose a potential threat to the United States hegemon: Iran, Russia, and Venezuela fit this criteria. These countries are abundantly resource-rich with corrupt regimes in power, creating an intricate political and economic sphere, in which research needs to further explore involvement with cryptocurrencies.

The Islamic Republic of Iran

The 1979 Islamic Revolution marked a new era in Iran; the instauration of a theocracy ruled by a non-secular kleptocracy. The revolutionary leader's foreign policy, Ayatollah Khomeini, said "neither East, nor West, but the Islamic Republic" (Ramazani, 2004). Khomeini and his regime immediately overturned pro-Western foreign policy set by the Pahlavi dynasty, and adopted an anti-West outlook. During the first five years of the Islamic Republic, over 8,000

political opponents who challenged Khomeini were executed (Ramazani, 2004). There were restrictions on freedom of speech, press, homosexuality, and overall unequal gender treatment. Iran's struggle for regional power and instability after the revolution built a fragmented political system with internal disunity (Ramazani, 1981). Fragmentation from within forms a weaker political front and also delayed numerous political decisions and policymaking. However, both left and right political groups agreed economic independence from the West will therefore grant political independence, not vice versa.

Contemporary Iran has two non-class power structures known as religious populism and clientelism (Alamdari, 2005). Religious populism is a political, ideological, and radical mass movement that is centralized with a charismatic leader. Populism-prone followers are manipulated and become dependent on the leader. Khomeini portrayed this role, promising the people freedom and abolishing extreme suppression under the Shah – however, Khomeini ended up suppressing his people and political opponents (Alamdari, 2005). The second non-class power structure is known as clientelism, which is a non-class system centered around the relationship between the patron and client that can become the source of political power when general laws are weak (Alamdari, 2005).

Clientelist relations bring forth economic development that feeds corruption. In Iran, corruption has been affiliated with the high-ranking clerics, who has access to innumerable political and economic privileges, while also benefiting from the court system which is under the control of ruling clergy. Other forms of corruption occur as bribes from the government agencies, instead of exerting pressure for political reform. The source of income in modern

clientelism, in the case of Iran, is the rentier state; oil (Alamdari, 2005). Oil is an abundant resource that has given Iran the opportunity to achieve vast amounts of wealth, if managed wisely. However, Iran's natural resources are in the hands of the state, raising more suspicion on corrupt measures being taken. During the high demand for oil in the 1970's, oil began to influence foreign policy and national-security strategy (Ehteshami, 2002). Prior and post revolution, oil revenue accrues to the Iranian kleptocracy because of the state monopoly over oil. Oil has always played a key role in the growth and development in Iran.

There are several hurdles Iran's regime faces which this case study aims to explore. Iran is an oil-rentier state that primarily relies on the production and sale of petroleum, causing the economy to be extremely volatile to any fluctuation. If oil prices are down, consequently, the economy will follow. The arid geographical land coerces the country to rely on importation of many goods. However, due to Western sanctions on the inflated rial, Iran's currency has lost purchasing power parity in the market and this raises inflation higher.

One of Khomeini's major reforms during the 1979 revolution was to abolish class structure – however, with inflated goods marked at higher prices, this causes poverty rates to rise. Aside from the amount of corruption and fragmentation within the regime, Iran is claiming to be beginning to economically diversify and thus to provide another solution to fix the inflated currency.

The development and adoption of native cryptocurrencies is becoming increasingly appealing in efforts to dodge brutal conditions the economy is enduring, most notably the series of Western sanctions. The head of the Civil Defense Organization of Iran stated that

"cryptocurrencies can help bypass certain sanctions through untraceable banking operations," clearly indicating Iran will privatize blockchain if transactions are 'untraceable.' Iran's kleptocracy has a history of committing illicit activities, such as drug trading with Venezuela and funding of terrorist organizations, with the possible intention of continuing such agendas under a privatized blockchain. Revolts in December 2017 and increased sanctions throughout 2019 leaves the regime in a fragile state. The adoption of cryptocurrencies will stabilize economic conditions by tokenizing the rial, facilitating trade in cross-border transactions, and bypassing Western sanctions. Iran has developed a native cryptocurrency, but the United States has passed "Blocking Iran Illicit Finance Act," forbidding the use of digital currencies, similar to Venezuela in the preliminary stages of adopting the petro (Blocking Iran Illicit Finance Act of 2018, H.R. 7321). Thus, to maintain power, Iran's kleptocracy is taking every measure to ensure survival.

Iran holds 10% of the world's oil reserves and is the second largest producer in OPEC, after Saudi Arabia. 60% of exporting revenue is based on oil, also making Iran's economy susceptible to fluctuations in oil prices (CIA Factbook). The 1970's were defined as large increases in oil prices, however, the Shah's ambitious plans to modernize the economy left a greater dependence on oil income. During this time, the oil sector grew to 50% of GDP but output growth declined substantially (Dreger & Rahmani, 2014). The following period of 1980-1988 was characterized as an outbreak of political instability attributable to the 1979 revolution, sanctions due to the hostage crises, and war with Iraq, which left a stagnant economy. The economy eventually recovered in later years driven by uplifting of sanctions, reconstruction efforts, and privatization of some formerly state owned enterprises (Dreger & Rahmani, 2014). During 1989-1996, Iran's GDP rose 6% per year but with exceptionally high inflation rates,

reaching a record high of 50% in 1995. 1997-2004 the economy became more stable with oil income increasing by 20% and real output expanded at 5% (Dreger & Rahmani, 2014). In 2017, Iran's GDP growth dropped 3.8% due to dissipating oil prices and effects of Western sanctions. According to the World Bank, an overwhelming majority of growth came from non-oil sectors, such as services, growing by 4.4%. Iran's GDP from 2018 and 2019 will be interesting to note due to the high influx of Western sanctions and travel ban intact.

According to the 2019 Index of Economic Freedom, Iran scored 51.1, ranking 155th freest in the world. Public debt is equivalent to 40% of the GDP. Investment freedom scored the lowest, revealing Iran has repressed opportunities to advance their economy through foreign direct investments. These characterizes exemplify that of an extractive economy, defined at the beginning of this paper, where the ruling regime is fully controlling domestic markets. Imbalances in the distribution of political power can result in distortions or discrepancies in the allocation of investment funds. State-owned commercial banks and specialized financial institutions, appointed and reviewed by the Supreme Leader, account for a majority of the financial sector. Iran's intrusive state holds back from economic developments, investment, and trading opportunities that can bring forth prosperity to strengthen the economy. Trade is extremely crucial, as an increase can lead to an appreciation of the real exchange rate.

Iran's economic dependency on oil, high economic volatility, and closed economy increases the chances of corruption. Specifically, Iran is not encompassed in the WTO and has Western sanctions imposed, decreasing the openness of the Iranian economy (Dadgar & Nazari, 2012). Iran's closed economy is quite problematic as Dadgar and Nazari (2012) argued the less

transparent an economy is, the more opportunities for corruption. Hence, one could speculate and infer potential corruption measures being taken due to a closed off economy in Iran. Iran's assets, financial institutions, and political institutions are all controlled by the state, thus, Iran's wealth is allocated in the hands of the ruling kleptocracy.

In 2011, seven state-owned and private Iranian banks were involved in a $2.8 billion embezzlement case, possibly including forged documents. Subsequently in 2014, there was another embezzlement scandal worth more than $4.5 billion from the Tejarat Bank. Embezzlement is not uncommon in Iran due to the high amounts of corruption happening behind closed doors. Because the economy predominately relies on petroleum, there is a positive relationship between the amount of corruption cases and oil revenue – there was an $11 million increase in oil revenue from 1984 to 1989 and almost double the amount of corruption cases during this time period as well. Dadgar and Nazari (2012) analyzed the Iranian government's monopoly over natural resources, concluding economic corruption is expectable, and the misuse of resources will be the demise of the economy. When exploring the Corruption Perception Index, the observations in Dadgar and Nazari's journal on corruption were correct, as Iran was ranked 138 out of 180 countries internationally (Transparency Index, 2018).

Shah Mohammad Reza Pahlavi's reform during 1973, known as the White Revolution, aimed to modernize Iran through land reforms, industrial growth, enfranchisement of women, which expanded the GDP from 36.5 billion to 83 billion in 1974 (Chehabi, 1990). The shah's ambition to modernize Iran reflects how crucial a strong economic base is needed as a precondition for Iran to rise. Oil was expected to transform Iran into a global military and

regional power in the Middle East through rapid expansions of domestic economy and industrialization (Ehteshami, 2002). After the 1979 Iranian Revolution and the Iran-Iraq war, reduction in oil exports augmented a decline in the country's economy, which then became controlled by the government. Conservative approach to foreign policy with prejudice to the West consequently decreased oil exports to 888,000 barrel per day, also decreasing GDP. In 1989, Iran's GDP was at 11 billion, the lowest in history, due to the Islamic ideology and subsequent radicalization under Ayatollah Khomeini along with immense amounts of political instability caused by the Iran-Iraq war (Rahmani, 2015). Hence, there is a relationship between high political instability, reduction in oil exports, and decreasing GDP. Alongside oil, Iran holds the most natural gas reserves in the world covering 1,200 trillion cubic feet, also comprising more than one-third of OPEC reserves. The production of natural gas has increased in value from 51,563 million in 2000 to 155,629 million in 2013 which comprises a portion of Iran's GDP ("Iran," OPEC, 2018).

The ideological transformation from the 1979 revolution worsened relations with the United States, and the continuation of Western sanctions provoke inflation rates to rise abruptly. Iran's relations with the West became extremely tense during the American hostage crises in 1980's. Iran faced a series of Western sanctions to pressurize the regime to release the American hostages. This is exceptionally problematic to Iran, a predominately oil-rich country, that lacks domestic industries that can produce goods and commodities. The importation of goods rose almost $12 billion from 1989 to 1991. The reliance of importing goods substantially deteriorated the economy, posing many difficulties for the regime to pay off foreign debt. Before the Nuclear Deal was officially implemented in 2012, Iran endured sanctions on the Central Bank of Iran,

importation of oil in seven major customer countries, and economic sanctions. The United States was hoping sanctioning Iran could ultimately pressurize the regime to forfeit any possibility of developing nuclear weapons. Per the United States agenda, this plan worked; in 2012, Iran called an emergency Red Cross relief because hospitals lack sufficient technology and machinery to keep patients alive. Consequently, sanctions and oil exporting sanctions caused volatility in exchange rate of Iran. The rial lost 80% of value and the reliance on importation of goods led to increase inflation rates (Rahmani, 2015). According to the World Bank, Iran's inflation rate rose 19.6% from 2011 to 2013. Before the recent U.S. and EU sanctions were imposed on Iran, oil accounted for 80% of Iranian exports and 60% of fiscal revenue (Dreger & Rahmani, 2016). Another impact of Western sanctions is blocked access to SWIFT, which is an internationally recognized identification code for banks around the world. SWIFT codes are mainly used to securely transfer information between countries. Iran no longer has access to SWIFT, leaving the country in a vulnerable position financially, as they cannot pay for imports or receive payments for exports (Babak, 2013). The Supreme Leader of Iran has introduced a new concept to circumvent the hurdles of Western sanctions, known as Resistance Economy (Babak, 2013). The Resistance Economy neutralizes the threat of sanctions through ten aspects, stated by Ayatollah Khamenei. These include dynamism, reliance on domestic capabilities, making people the pivot, reducing oil dependence, national security, abolishing corruption, and reforming the needs of consumption (Babak, 2013). Additionally, the Resistance Economy plans on increasing investments in knowledge and science. Such ambitious goals to declare independence from a budget centered around oil revenue includes the need to reform tax systems and privatization. This plan set in motion is expected to help combat Western sanctions and keep Iran's economy

afloat. In efforts to save the deflated currency, the regime is in the process of developing a native government-backed cryptocurrency to fight hyperinflation, but moreover, to ensure the survival of the Islamic Republic (Oziev, 2017).

Iran's kleptocracy is manipulating oil as an instrument for achieving ideological goals, domestically and internationally. The Islamic Republic is built upon a theocracy and pro-conservative policies limits Iran's capabilities of industrialization and international trade. Before the 1979 revolution, GDP was high under the Shah's reform policies, but high political instability after the revolution shattered Iran's petroleum industry and potential to diversify the economy (Chehabi, 1990). Post revolution, Iran's established kleptocracy has disunity within and weak fragmentation. A lack of unification transferred to arduous policymaking with various conflicting approaches. However, the consistency of the resistance economy is aimed to strengthen and united Iran by making people, knowledge, and science the pivot. Iran's current dependency on oil and natural resources has led to high economic volatility, and Western sanctions further destabilize the economy by driving inflation rates higher. Because Iran lacks modernization, the country relies heavily on imported items which drives inflation rates higher, depreciating the value of the rial. If executed correctly, the resistance economy should alleviate the tense threats issued by the West, and help regenerate the economy. Cryptocurrencies is another viable option the regime faces. Given the series of imposed Western sanctions and efforts to preserve the economy, Iran's adoption to cryptocurrency is permissible under Shari'ah law, and in fact, could bring a new era to the Middle East region (Oziev, 2017). The Islamic regime's survival depends on salvaging the economy through the creation of native cryptocurrencies.

Cryptocurrency adoption occurs rapidly in countries where the banking system has failed and thus can cheat out of sanctions. Iran shows evidence of increased use of digital currencies among the population. Hadi Nemati, an Iranian cryptocurrency researcher, stated "Bitcoin is a utility because it gives access to the world economy" (Konowicz, 2018). Iranians invest in Bitcoin because they have limited financial freedom and access to international fiat currencies. The population and government are seeking cryptocurrencies to skirt sanctions, which could pose a potential threat to the dollar (Konowicz, 2018). Aside from the resistance economy plan, Iran remains a fragmented and oil dependent country vulnerable to economic fluctuations from the international market. With another round of sanctions imposed, specifically targeting Iran's petroleum industry, oil exporting revenue is predicted to be negatively affected. Iran must combat high amounts of corruption, especially in the financial and political sphere, to correctly enforce the resistance economy. Additionally, Iran must adapt and economically diversify themselves as the brutality of sanctions can easily cripple the GDP. These attributes explain, to a great degree, Iran's adoption of cryptocurrencies.

The Russian Federation

The collapse of the Soviet Union led to the creation of the new Russian Federation, where large-scale privatization of the state's assets became the main economic story of the last three decades. A political and economic power vacuum opened as the Soviet Union ended. New institutional structures were formed after the dismantling of previous Communist institutions. The chaos of resulted in power transitioning into the hands of informal networks which had influence, political connections, and access to economic resources.

The economy in Russia made a gradual transformation from centrally planned system into a market economy. The complexity of transforming from communism to democratic institutions combined with the state's poor accountability made the newly formed ruling class easily susceptible to capture the states wealth, transforming it in a kleptocracy. Thus, the income inequality gap grew, along with weak legal and political institutions (Yakovlev & Zhuravskaya, 2009). Businesses started using criminal groups and to eschew legal means to enforce legal contracts and property rights. Hence, there was a period of consolidation of privatization in which economic power was controlled by a rapidly dwindling network of well-connected oligarchies and kleptocrats.

Politically well-connected competitors dominated weaker rivals (Rutland, 2003). Rapid mass privatization of companies was likely to lead to massive self-dealing, which is defined as the conduct of acting in own interests rather than the interest of the beneficiaries.

Corrupt privatizations of corporations hindered future economic and political reforms – corrupt officials and company insiders resisted such reforms while the public rightfully viewed privatization as organized crime. However, Russia's struggling economy was caused by privatization and by the high levels of corruption taking place within government that allowed for corrupt privatization.

Corruption is a consistent epidemic in Russia, especially under President Putin, leaving a notable impression in the international realm. Russia experiences two main forms of economic corruption: petty corruption, which is bribing of low-ranking officials and high-level corruption, large appropriation of state resources by elites, making Russia a kleptocracy (Roaf, pg. 3, 2000).

According to Dawisha (2015), $300 billion dollars is used annually for bribery in Russia, not including the unreported bribes that occur. High levels of corruption forms a positive relationship with President Putin's rise to power. According to the World Affairs Journal by Dawisha, when Putin was rising to power, the Kremlin began to enforce strict rules that challenged individual freedoms guaranteed under the Russian Constitution. In other words, those who questioned Putin's authority were consequently punished, eroding the freedom of assembly, speech, and press. For example, elections in Russia are controlled and easily manipulated to diminish the notion of democracy for the purposes of keeping Putin's kleptocracy intact. High amounts of political and economic corruption lead the public to perceive Russia as highly corrupt, ranking 29 out of 100, and the international level ranks 135 out of 180 other countries (Transparency International).

Additionally, the largest companies in Russia were sold in a corrupt way to a group of well-handed men, which dubbed a kleptocracy. This massive Russian privatization led to an emergence of the Russian kleptocracy. Individuals achieved wealth through committing theft from the government and now control most of Russia's major firms. This was visible in the arrest of Mikhail Khodorkovsky, the richest man in Russia, who was also the head of Russia's largest oil company, Yukos. He was sentenced to eight years in jail for tax evasion. The fact that businesses have evolved into a narrow kleptocracy has made it easier for Putin to recapture control over the economy (Rutland, 2003). As the kleptocratic power grew, corruption became highly incorporated in the Kremlin, as the state bought out all news outlets in efforts to manipulate and control.

The high volumes of economic and political corruption occurring behind closed doors are notable in Russia. During the years of 1995-1996, more than 60% believe high amounts of corruption could threaten Russia's national security, whereas 70% agree Russia may be considered a corrupt state (Levin & Satarov, 2000). The political impacts of corruption result in a kleptocratic government that is neither credible nor rewarded. Consequently, citizens become alienated from society and have limited political participation in the system, decreasing trust of authority. High corruption limits the amount of redistributive policies adopted by Russia. Redistributive policies are welfare programs funded by taxpayer's money – however, taxpayers want reassurance the money is correctly and efficiently allocated to these programs. A power-hungry kleptocracy that boots the unlawful redistribution of resources in favor of the regime limits the amount of redistributive policies. Corruption within law enforcement bodies that channel for money laundering and looting increases social tensions while compromising political stability (Levin & Satarov, 2000). Thus, in times of high political instability, public officials are more susceptible to ensuring their survival by receiving bribes.

Russia has an abundance of resource-rich commodities. Russia's natural gas extraction has grown by 8.2% in 2017, accounting for over one-third of global growth. Russia has a vital amount of oil reserves, ranking 6th in the world, and possess 18% of the largest gas reserves in the world, similarly to Iran and Venezuela. In 2009, oil and natural gas have accounted for 80% of the country's export, thus making resources the driving force of the economy. After the brutal economic crises of 2008, oil prices plummeted and crippled the Russian economy. In efforts to slow down the devaluation of the ruble, the Central Bank of Russia spent one-third of its $600 billion international reserves in 2008. Subsequent to the global crash, the government embarked

on an ambitious plan to reduce dependency and focus on cyber security sectors (Ghalayini, 2011). In 2013, 68% of export revenues were received from petroleum, which is produced privately since 1990 ("Russia," BP, 2018). According to the CIA Fact book, Russia is a predominately statist economy with the concentration of wealth falling into the elite. These attributes result in an economy volatile to global market fluctuations. Volatility is negatively correlated with growth, which leads to higher cost of capital, lower investment, and lower welfare (Kalcheva & Oomes, 2007).

Western sanctions have placed limitations on Russia's self-interest and capabilities of dominating Eastern Europe. The U.S. and EU imposed sanctions on Russia in response to the invasion of Crimea and continued imposing after alleged meddling in the 2016 U.S. elections. Thus, the ruble depreciated by 50%, Foreign Direct Investment has decreased by 5%, oil exportation declined, and oil prices have dropped 50% (Nelson, 2015). Devaluation of the ruble against the dollar has been caused by falling oil prices.

In efforts to compensate for the devaluation, the central bank aggressively expanded money supply by increased printing. The impact of this led to lower public spending, higher inflation due to higher import prices, and collapsing government revenues. Because Russia's economy depends on resources, Western sanctions were directly targeted to impact this industry and non-oil exports did not benefit much (Dreger, Kholodilin, Ulbricht & Fidrmuc, 2016). The impact of sanctions has a grave effect on Russia's GDP.

According to the International Monetary Fund (IMF), GDP growth in 2014 was estimated at 0.2%. Scholars have estimated a loss of $4-5 billion per year due to sanctions (Wang, 2015).

The severity of sanctions could shake Russia's financial system and place limitation in certain sectors. Consequently, sanctions are pushing Russia into alliance with other countries who have U.S. imposed sanctions as well, such as Venezuela and China. In efforts to alleviate the severity of U.S. sanctions, Russia has developed a native government-backed cryptocurrency, known as the CyrptoRuble, with an alternative version to blockchain, called MasterChain (Kakushadze, 2018).

A buffer layer is coded in this technology to privatize the MasterChain; any funds will be accessible to the Russian oligarchy and hidden from the Federal Reserve, United States Government, and the European Union. The development will grant Russia's monetary system independence from the Federal Reserve, European Central Bank, and allied central banks control. Hence, the CryptoRuble could effectively launder money through the Russian authority and only the kleptocracy will have access. This ensures complete governmental and solitary control over the CryptoRuble. The primary goal of CryptoRuble is to escape sanctions and gain independence from the West while consolidating power by privatizing the blockchain system (Kakushadze, 2018).

Russia is the hub for state controlled cyber capabilities. Evading sanctions through digital currencies is prominent in Russia, especially through cyber hacking. Russia is capable of accessing cryptocurrencies and is becoming a target of interest by the regime. There are numerous ways in successfully acquiring cryptocurrencies, but Russia has particularly chosen cryptocurrency mining. Russian energy companies, such as Gazprom and EuroSibEnergo, recently declared they were negotiating the sale of 70 Bitcoin-mining companies.

The major strategy pursued by Russia is the creation of a national cryptocurrency, backed by commodities such as gold and oil. President Putin's advisor, Sergi Glazyev, stated "cryptocurrencies may help Russian banks avoid international sanctions," and supports the creation of a digital ruble (Konowicz, 2018). The establishment of a digital currency in Russia is intended for broader domestic and international utility. Another potential strategy is coupling multiple states facing Western sanctions to a common cryptocurrency. This union has been established by the acronym BRICS, which is the association of five emerging national economies (Brazil, Russia, India, China, and South Africa).

Recently, the idea of a supranational BRICSCoin has surfaced, backed by their own commodities (Konowicz, 2018). The union and of a common digital currency with Western imposed sanctions could press immense pressures on the dollar. Not only will this aid in sanction evasion, but also increase trade by making exchange rates between these countries more equitable. The international intentions of BRICS aim to create this cryptocurrency for the purposes of global commerce and could potentially be successful in undermining the power of the dollar (Konowicz, 2018). Autocratic regimes who possess cryptographic cyber capabilities, as seen in Russia, recognize the potential of blockchain technology. For example, blockchain can be used to further monitor the population by linking currency directly to individuals and businesses. This increases government control and political leverage which is the goal of a kleptocracy desperate to reassure their reign (Konowicz, 2018).

High corruption dominated the Soviet Union but lingered after the collapse and worsened when Putin rose to power. Russia has made advancements in participating in the global

economy, compared to the Soviet Union, but under extreme conditions. Copious amounts of corruption drive the law enforcement in Russia, hindering economic potential for growth. Putin brought stability to Russian politics from previous president Yeltsin, but is securing his kleptocracy by creating a private blockchain and trusting his elite group to help maintain status quo by carrying out state-run functions. Russia's desire to fulfill personal agendas, such as breaking dependence from Western powers and expanding influence throughout Eastern Europe, has encouraged the country to create an authentic blockchain and native cryptocurrency. Russia's probable intentions behind the development of cryptocurrency is to exert Russian influence globally while exploiting the state and economy (Frebowtiz, 2018). The potential of an alliance between Western sanctioned countries, in which Russia is taking the lead, poses a major challenge to US sanctions.

The Bolivarian Republic of Venezuela

Venezuela is a petro-state with three interrelated attributes: export revenue is highest in natural resources, economic and political power is concentrated in the kleptocracy, and political institutions are weak and unaccountable, resulting in increased amounts of corruption. Indeed, petro-states such as Venezuela endure high volatility (Karl, 1999). The efforts of oil production override the necessity to develop strong state institutions that can economically diversify the economy. Additionally, petro-states rely heavily on production of natural resources and less on taxes, which leaves an impaired relationship between government and citizens (Karl, 1999).

Venezuela is an archetype of a corrupt petro-state, experiencing a strained relationship with its citizens, and a failing economy. Venezuela has an extensive history of political

instability caused by mismanagement of resources, lack of transparency, and high amounts of corruption committed by the ruling elite – Maduro's administrative party (Rindborg, 2018).

Corruption permeates the political, social, and economic realm in Venezuela, with bureaucrats disregarding regulations and citizens paying bribes to compensate for the lack of basic government services (Coronel, 2006). Corruption has always been present in Venezuela and originated from previous kleptocracies, such as Hugo Chávez and Juan Gomez (Coronel, 2006). Decades of poor governance has driven Venezuela's economy to encounter numerous hurdles, and subsequently, the population is struggling to survive. According to the 2018 Transparency International Corruption Perception Index, Venezuela was ranked 168 out of 180 countries. This corruption is facilitated by the general environment of impunity; those in top positions committing corrupt crimes are exempt from punishment and not held legally accountable. Venezuela's major corruption scandal began during the period of Hugo Chávez, who rose to power based on anti-corrupt campaign platform.

The Bolivarian Revolution initiated by Chávez is a notable political event that worsened corruption levels in Venezuela (Coronel, 2006). Anti-corrupt laws were weakened by impunity and centralized power in government. The Bolivarian government was seen as stealing wealth for itself and selling drugs on the black market (Coronel, 2006). Subsequently, the Maduro administration has become increasingly autocratic, by jailing opposing political candidates and stripping the National Assembly of powers to oversee the economy.

Maduro held an election to replace the National Assembly, who has authority to rewrite Venezuela law, with supporters of his administration. Supporters of Maduro won all 545 seats

with the clear intention of Maduro consolidating power (Hernandez). In 2016, President Maduro was named Person of the Year by the Organized Crime and Corruption Reporting Project. Hence, corruption has been a consistent theme in all socioeconomic realms in Venezuela committed by the top elites extracting wealth for self-serving purposes. To truly fight corruption, there must be transparent government institutions that serve the public's interest and not personal agenda. Due to increasing levels of conflict within the government, heavy state intervention in the economy allows political leaders to easily exploit natural resources. These contributing factors of high corruption and state intervention in the market explain the continuous economic crises Venezuela is enduring.

Venezuela is the largest net exporter of oil with 98% of exports solely from oil, creating heavy dependence and high economic volatility (CIA Factbook) Analysis of trends in Venezuela's relationship between oil and GDP reveal a strong correlation. Venezuela experienced a significant increase in oil production profits during the oil embargo in 1973 and similarly the GDP rose during these years (Agnani & Iza, 2011). The wealth from oil allowed Venezuela's government to invest in public expenditures, including health care, education, and food subsidies. Literacy and welfare programs were prospering. However, after OPEC violated production quotas, oil prices fell drastically in 1980 and halted Venezuela's progress. Market fluctuations such as these leave Venezuela's economy susceptible to economic volatility, accumulation of greater debt, and corrupt governance that further prohibits diversifying the economy.

In response, Venezuela's dysfunctional and corrupt state behavior results in political and economic mismanagement. This is exemplified in 2014 when oil prices plummeted due to economic mismanagement, poor economic situations in Venezuela, and the U.S. imposed sanctions, and thus the GDP dropped from 3.9% in 2014 and 6.2% in 2015 (Wulf, 2018). Oil prices were selling 50% under the average price it should be due to mismanagement of oil, leading to limited public spending, and decreasing GDP (Koech, 2016). In response to a declining GDP, the government increased inflation rates by 122% in 2015 to compensate. Imported goods fell 27% in 2015 attributable to U.S. sanctions, causing acute scarcity in Venezuela –1 in 3 public necessities was missing from grocery stores (Wulf, 2018). In efforts to ease economic instability, President Maduro raised minimum wage a total of five times in 2017, and the money supply has increased by 458% (Wulf, 2017).

Maduro's desperation to ease economic hardships by raising minimum wage led to an oversupply in money circulating throughout the economy. Thus, Venezuela's hyperinflation grew and resulted in mass human rights abuses of starving people and alarmingly higher rates of poverty. Mass migration in Venezuela became widespread with two million people leaving the country, including those who had a university education and capital to leave. Doctors, lawyers, and other professionals migrating out of Venezuela left the workforce strained. In January 2016, unemployment rose at 8%. This effects all sectors of the workforce, including oil production, which has fallen to its lowest point. In June 2018, production fell to 1.34 million barrels per day which continues negatively affect the economy.

According to the Venezuelan Pharmaceutical Federation, 85% of basic medicines were unavailable or difficult to obtain, incentivizing illicit activity such as smuggling and trading to ensure survival. 90% of trading between the Venezuelan border with Columbia was black market for the desire of profitable business. The Maduro administration has allegedly been illicitly engaging in a drug cartel as well, with a potential partnership with Iran. The President of the National Assembly, Diosdado Cabello, was accused of drug trafficking and chief of the Cartel of Suns, an organization involved in international drug trade (Bailey, 2012). Additionally, according to Drug Enforcement Agencies and the United Nations, there has been evidence of extensive drug trade from Venezuela to Western Africa. There is a positive relationship between involvement with drug cartels and crime.

According to the United Nations, Venezuela has the second highest murder rate in the world. Crime is rapidly widespread throughout Venezuela and has increased during Chávez's presidency due to institutional instability of the Bolivarian government (Crespo, 2004). In 2003, the homicide rate increased to 42 per 100,000 people in Caracas, a city known for violence, and conducting a survey, 42% also felt very likely to be a victim of crime in the future (Crespo, 2004). High cost of living, scarcity index, and shortages of basic necessities have raised crime rates further. In retrospective, these crime rates continue growing due to insufficient measures, underpaid authorities, and shortcomings of social discipline. A weak government with internal conflicts and high corruption that funds drug cartel does not only impact the domestic economy, but the social realm. Venezuela's kleptocracy affiliation with drug cartels lowers political legitimacy, overall trust in governance, and leaves increasing crime rates.

Venezuela's participation in drug cartels amongst other international criminal activities have resulted in Western sanctions (Bailey, 2012). Two travel agencies in Venezuela provided financial support to Hezbollah in accordance with Iran and Venezuela's lack of cooperation with the United States on anti-terrorism efforts led to freezing assets and prohibiting transactions (Congressional Research Service). Alongside sponsoring terrorism and drug cartels, further sanctions were imposed on Venezuela for human rights abuses. Shortage of food and medicine has coerced many Venezuelans to embrace homelessness and poverty. Even though the Venezuelan government had intentions of developing a native cryptocurrency to circumvent sanctions, the U.S. still imposed sanctions on utilizing transactions with digital currencies. The most detrimental round of sanctions was imposed on January 2019 on PDVSA, the government-backed oil sector of the Venezuelan economy, prohibiting engagement in transactions with the company (Congressional Research Service).

Washington purposely imposed sanctions targeting Venezuela's oil industry to deplete Maduro from obtaining vital stream of income. Venezuela's economic dependency on oil revenue now sanctioned by the United States will consequently leave a profound effect on the economy. Many fear this will worsen the devastating humanitarian crises into a catastrophe. America's role in the global banking system is quite extensive, thus, these sanctions could prevent Venezuela from carrying out financial transactions. Maduro's administration has developed the first sovereign government-backed cryptocurrency to circumvent sanctions, but with many challenges alongside.

Venezuela's cryptocurrency, known as the petro, is backed by oil, gold, gas, and diamond reserves (Herrera & Hunter, 2018). The administration hopes this will alleviate some epidemics the Venezuelan economy faces, especially with controlling money supply, and avoiding Western sanctions imposed by President Trump in 2017.

President Maduro stated that his "government would issue nearly $6 billion of petros as a way to raise hard currency and to evade financial sanctions imposed by Washington" (Herrera & Hunter, 2018). This development was accomplished with the assistance of Russia's cyber capabilities and speculated to be a practice-run of how the CryptoRuble would operate (Konowicz, 2018). The petros value has been pegged by the government depending on the market price of oil and is backed by a "purchase-sale" contract. The petro is controlled by the Venezuelan Executive, making this the first state-backed national cryptocurrency (Herrera, 2018).

The development of an alternative international currency that steers away from the traditional fiduciary system was another reason the petro was developed. Built upon the blockchain technology, this allows greater opportunities to bypass the domination of the U.S. dollar. The Venezuelan administration plays a pivotal role in how to execute this; if adopted correctly, the potential of this technology will restore hope in Venezuelan citizens of a revived economy.

In efforts to fight hyperinflation, Maduro announced that the "Sovereign Bolivar" will have its value anchored to the petro. The Sovereign Bolivar is a new currency that eliminates five digits from the current currency, with the value linking to the petro (Herrera & Hunter,

2018). Thus, the petro fluctuates in accordance, forming an interdependent relationship between these two currencies. Both currencies were developed to combat hyperinflation while reestablishing stability, greater financial independence, and lowering market volatility. While these principles sound theoretically successful, the practical application is questionable. The lack of international investment and growing reliance on oil is beset with problems.

Aside from circumnavigating Western sanctions and hyperinflation, the underlying reason the Maduro administration adopted government-backed cryptocurrency is to alleviate debt. The petro serves as an instrument of financing for the Venezuelan government to issue debt to be traded among parties and accompanied by the illegal promise of an oil reserve guarantee. Looking deeper into the Presidential Decrees, it was discovered the petro was a creative tactic developed to address Venezuelan debt through the use of blockchain technology disguised as currency (Herrera & Hunter, 2018). These oil reserves that were allegedly supposed to back the petro were "potential" and not yet developed. Therefore, the petro was sold at the price of Venezuelan oil basket at the time but was illegitimately backed by nothing (Herrera & Hunter, 2018). The main purpose of the petro was formed to relinquish the kleptocracy from exorbitant debt whereas the Sovereign Bolivar aimed to control hyperinflation.

The mismanagement in oil prices, severe hyperinflation attached to the bolivar, U.S. sanctions, intention to relinquish debt, and high amounts of corruption were catalysts for Venezuela's adoption to native government-backed cryptocurrency, the petro. Maduro's dysfunctional state behavior and desperation to circumvent Western sanctions and renounce Venezuelan debt led to a failed petro.

The petro is considered a variation of cryptocurrency; it was a promise from the Maduro regime that one petro can be traded for a physical oil barrel (Herrera & Hunter, 2018). The Maduro administration mislead the population to create an illusion of stability, but with the ulterior motive of addressing debt. At best, the most beneficial aspect of the petro is trade. For example, the petro can trade goods or services, other cryptocurrencies, or to pay the state with no interest rate (Herrera & Hunter, 2018). If the state were to correctly execute this, the petro could have alleviated hyperinflation and provide a stronger economic basis in Venezuela. However, given Venezuela's past of constant corruption with issuing debt and illicit drug trade, blockchain can also assist with strengthening Maduro's kleptocracy. If the distributed ledger is privatized, this will allow further corruption scandals and illicit drug trade to continue. Venezuela is ranked the most corrupt country in this study and has officially adopted a native government-backed cryptocurrency on false pretenses (Rindborg, 2018). Hence, this affirms the potential relationship between corruption and adoption of native government-backed cryptocurrencies.

Shared Attributes/Case Studies Overview

In the case studies, political instability birthed the current kleptocrats in Iran, Russia, and Venezuela. Rising revolutionary leaders promised political and economic reforms encompassed by democracy and inclusion, however, there were shortcomings. The shared attributes explain why the case study countries are applicable candidates for adopting native cryptocurrencies, to be further explored in this section.

Iran, Russia, and Venezuela's political and economic realm resemble one another, with several shared attributes. Politically, these countries have endured centuries of predated

instability with a corrupt kleptocracy that has successfully attained power and status, given high amounts of oppression. Democratic institutions are created with the purpose of placing effective constraints on political leaders but such institutions are absent in kleptocracies. Rather, kleptocracies have full persuasion and control over institutions through monitoring activity to prevent uprisings. These kleptocracies formed a cohesive corrupt environment, trickling from the political sphere into economics. Economically, these countries are statist economies and resource-cursed, resulting in poorer economic growth. Iran, Russia, and Venezuela's kleptocratic governments fully control the state economy, and politics to remain in power, generating fraudulent activity.

The reliance on resources to generate revenue result in limited economic diversification in these countries, and due to the high amounts of corruption, this limits Foreign Direct Investment. These countries experience similar symptoms of corruption, including embezzlement, disproportionate wealth distribution, high inflation and high economic volatility, amongst other factors. These countries have committed illicit actions that do not comply with international laws, thus, facing consequences such as U.S. and other, international sanctions. Such sanctions are an ongoing problem for these three countries. Economic sanctions places limitations on international trade, export revenue decreases, oil production, and inflation rates rise. However, all sanctions pose a threat to the domestic currency, and thus, loses purchasing power parity in the international market. These attributes are noticeable in Iran, Russia, and Venezuela, as sanctions marked the rapid downwards spiral of the economy, and depreciation of currency. Resource-rich states controlled by kleptocracies and shared attributes that follow may result in the adoption of native cryptocurrencies.

Rent-seeking behavior is another increasingly present attribute, which aims to manipulate public policy for personal benefit and is easily acquired through oil production. Oil gives the kleptocracy greater power and financial independence from the people, which is distinguishable in all three countries. In Iran, oil dependency results in no taxation, but consequently no representation either, severing the relationship between government and people while allowing the government to consolidate power. Oil production fully controlled by the state provides advantageous intentions of stealing wealth rather than investing capital into public expenditures or diversification of the economy. Thus, the money is not properly allocated towards sectors that need attention to maximize economic growth.

Iran's kleptocracy gives generous amounts of capital to support Hezbollah, a militant group based in Lebanon, however, Iranian citizens continue suffering as inflation rates rises and the dire need for importation of necessities. Additionally, Venezuela and Russia reportedly have a relationship with Iran in supporting militant groups throughout the Middle East. Rent-seeking behavior executed by kleptocrats induces astronomically high amounts of corruption, which explains why these countries struggle with lower economic performance, given the priceless wealth of natural resources.

If resource-rich countries have state-led economies with increasing government presence, greater potential for corruption and rent-seeking is likely to occur; this is the case in Iran, Russia, and Venezuela. Post revolution in Iran and Venezuela increased state intervention in the economy, especially the oil sector. The need to desperately consolidate power through rent-seeking practices produces grave affects, such as repressed political participation, election fraud,

and high political instability. Citizens are currently experiencing repressed economic and political freedoms, such as the Green Movement in Iran, along with Putin jumping between Prime Minister and President to exceed his term in Russia.

Iran, Russia, and Venezuela's kleptocracies undermine the fundamental notions of democracy, while keeping kleptocracies in power, not freely and fairly voted in, but by election fraud (Lanksy, 2018). If adopted in good faith, native cryptocurrencies can potentially address corruption and rent-seeking behavior. On the other hand, cryptocurrencies can aid the continuous epidemic of corruption through money laundering, redirecting debt, or embezzlement under a privatized blockchain. This was executed in Venezuela's case study, and under these circumstances, the kleptocracy will strengthen authority and reassure their reign. Politics and economics go hand-in-hand, thus, corruption in politics extends to economics. Iran, Russia, and Venezuela have mirror economies in which resources account for a large sum of export revenue. These countries struggle with economically diversifying themselves, resulting in volatile markets, and further producing a domino effect with higher inflation rates, dependence on imported consumer goods, high unemployment, depreciating currency, among other macroeconomic issues. These similar attributes logically explain why the economy is resource-cursed and experiences lower levels of economic growth. Because Iran, Russia, and Venezuela's kleptocratic regimes function in similar ways with several shared attributes, the outcome is the same in all three.

Shared qualities and common trends make these countries interested in adopting native cryptocurrencies. Cryptocurrencies address grievances such as inflation whereas blockchain

strengthens kleptocracies. Iran, Russia, and Venezuela have secured their kleptocracy by allocating power to close friends and supporters to maintain status quo. Rent-seeking is present in resource-rich kleptocracies which is detrimental to the economy.

Long term effects include financial inclusiveness, reduced wealth-creation, increased income inequality, which all three countries are currently experiencing. Exorbitant amounts of corruption within government and dysfunctional state legislation cannot sufficiently address these issues. Consequently, the corrupt actions of elite groups led to rent-seeking, mismanagement, and abuse of state resources. Corrupt kleptocracies view cryptocurrencies as a viable solution to continue money laundering for drugs or sponsoring terrorist organizations, while circumventing Western sanctions. Western sanctions, hyperinflation, and high economic volatility are consistent attributes in kleptocracies that could initiate native cryptocurrencies as a potential solution in these three countries. In efforts for these kleptocratic regimes to maintain power, the development of native cryptocurrencies is beginning to take effect. Cryptocurrencies provide economic stability to kleptocracies while providing and escape from Western sanctions and hyperinflation. Table 2 summarizes the "agreed" factors, or shared attributes, discussed in this section.

Table 2: Factors in Agreement in Case Study Countries					
Iran	Kleptocracy	Oil/Natural Gas	U.S. and EU Sanctions	High Economic Volatility	Depreciated Rial
Russia	Kleptocracy	Oil/Natural Gas	U.S. and EU Sanctions	High Economic Volatility	Depreciated Ruble
Veneuzuela	Kleptocracy	Oil	U.S. and EU Sanctions	High Economic Volatility	Depreciated Bolivar

Table 2: Factors in Agreement in Case Study Countries

Table 2 highlights shared attributes in Iran, Russia, and Venezuela based on case study overview. These countries are all kleptocratic regimes with resource-rich capabilities (oil and natural gas) that may result in high economic volatility. These countries share a depreciating domestic currency potentially due to Western sanctions. Shared attributes may produce a shared outcome, the adoption of cryptocurrency, which will be examined below.

Figure 2: Venn Diagram of Cryptocurrency Adoption in Case Study Countries

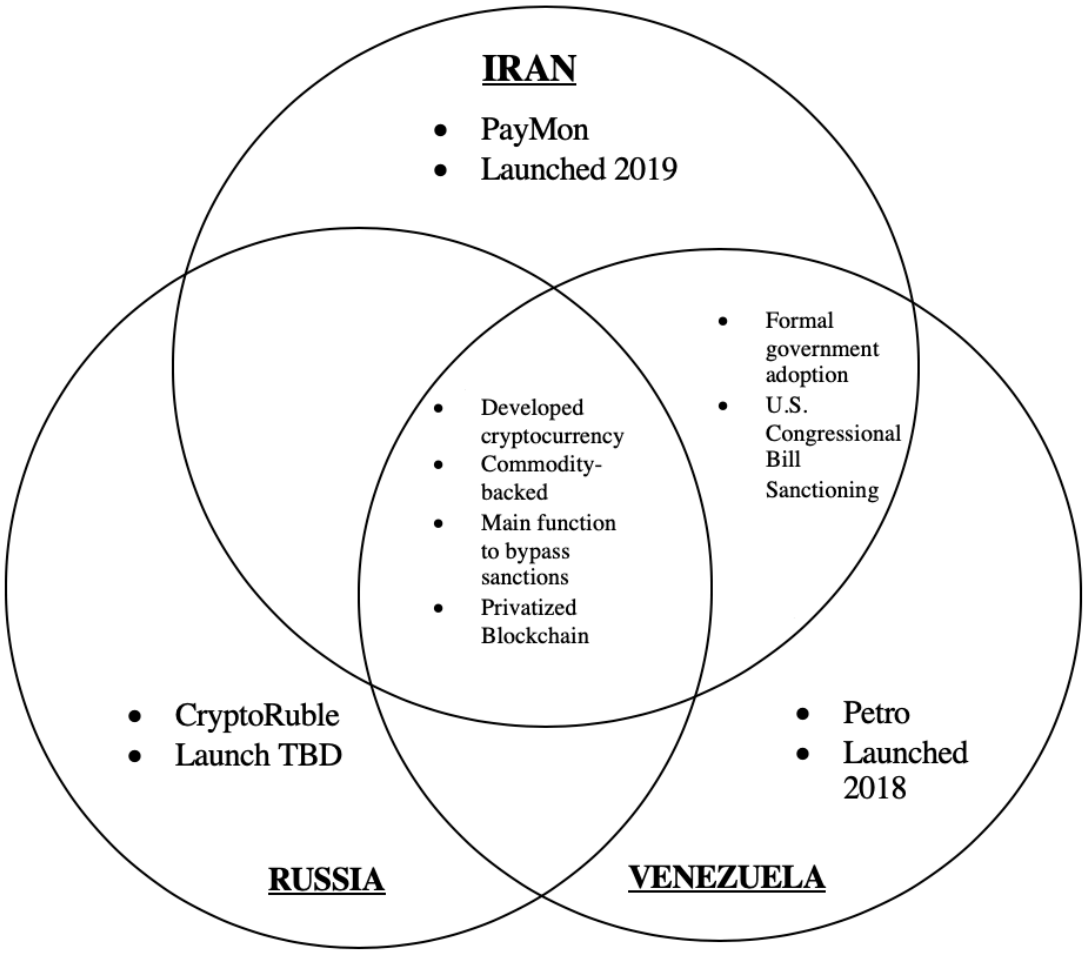


Figure 2: Venn Diagram of Cryptocurrency Adoption in Case Study Countries

Figure 2 displays the current status of government adoption in Iran, Russia, and Venezuela. At the very least, each country has developed a native cryptocurrency, but only Iran and Venezuela have formally adopted. Iran's regime recently launched a native cryptocurrency,

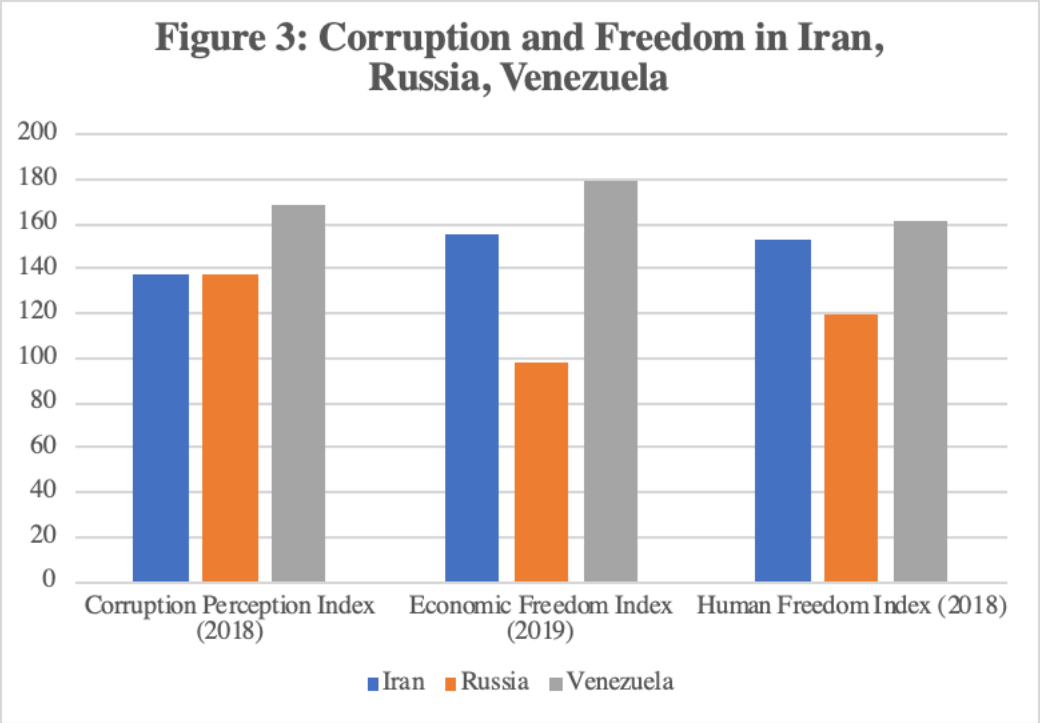
but is experiencing backlash from the West, including Congressional bills that ban exchanges or transactions. Similarly, Venezuela experienced the same reaction from the West during the adoption of the Petro. Given Russia has not formally adopted the CryptoRuble yet, the same Congressional Bill banning exchanges could be enforced. Prior to government adoption, cryptocurrencies were utilized informally by the population to purchase inflated goods in Iran, Russia, and Venezuela. As economic conditions worsened, adoption of native cryptocurrencies was seen as a viable solution to a multitude of problems. Ultimately, these countries share several attributes (Table 2) that could result in cryptocurrency adoption. The adoption of cryptocurrencies hold similar attributes internally and externally, as they are backed by commodities, privatized, and ruled by the kleptocracy.

FINDINGS AND RESULTS:

According to the shared attributes and potential government adoption, cryptocurrencies were initially utilized by citizens in Iran, Russia, and Venezuela. The shared attribute of depreciating currency is the most probable reason for prompt adoption alongside Western sanctions – deprecation calls for immediate economic reform and attention. Government consideration of adopting emerged as a viable solution to bypass depreciation and the severity of Western imposed sanctions. Western sanctions isolate economies whereas cryptocurrencies extends opportunities to struggling economies through digital technology and advanced cyber capabilities. Cryptocurrencies offers a revolutionary system of backing currency through state commodities, uninfluenced by the dollar. The main finding of this paper includes a potential relationship between certain attributes and rapid adoption of cryptocurrency, which calls for future statistic research, but there are confirmed shared attributes and a shared outcome. Within the case study countries, Venezuela's findings demonstrate highly corrupt regimes (alongside other factors) are more likely to adopt. Furthermore, if kleptocratic regimes adopted cryptocurrencies, a privatized version of blockchain may encompass this. Cryptocurrencies is revolutionary technology threatening United States hegemony and will continue holding prevalence. The case studies, and further research, yield the following findings, across the board for the three countries that make the object of this study:

According to the Corruption Perception Index (2018), Iran ranked 138, Russia 138, and Venezuela 168 out of 180 countries. Venezuela is the most corrupt country and the first country to adopt a native cryptocurrency accessible to the public in this study. According to the Index of

Economic Freedom (2019) Iran ranked 155, Russia ranked 98, and Venezuela ranked 179. This index provides an analysis on economic freedom –higher scores equal greater levels of repression and are more likely to experience poverty and deprivation. Again, Venezuela ranked severely high, as this country placed second to last internationally. Next, the Human Freedom Index (2018) is another tool used to analyze social freedom. Iran ranked 153, Russia 119, and Venezuela 161. Collectively, these indexes scored similarly, with high amounts of social and economic repression and high levels of corruption. These indexes will be graphed below.



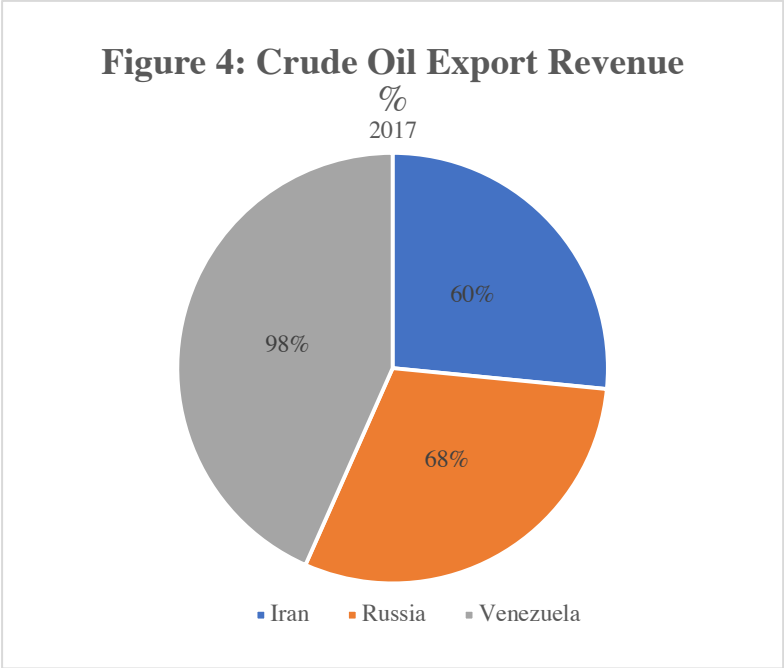
Source: CPI (2018), EFI (2019), HFI (2018)

Figure 3: Corruption and Freedom in Iran, Russia, Venezuela

Figure 3: There is a distinguishable pattern when measuring corruption, social, and economic freedom in the case study countries. Venezuela scored the highest in all three indexes, translating to high corruption with high amounts of social and economic repression. In terms of

corruption, Iran scored last (least corrupt), however, Russia has greater levels of political and economic freedom.

In terms of GDP, Iran and Venezuela had similar annual GDP's, whereas Russia superseded. According to the World Bank in 2017, Iran and Venezuela were in the bracket of $400,000 million whereas Russia exceeded $1.5 trillion in annual GDP. However, further economic growth varies in these countries. Iran declined to 3.7% due to shortage of oil export, Russia increased to 1.5%, and Venezuela scored -3.8%. Regardless of Venezuela's resemblance in GDP to Iran, the economy is rapidly shrinking and provides little economic growth, which explains the prompt adoption to cryptocurrency. Additionally, Venezuela is suffering from a 254% consumer price inflation in 2016, hence, labeling this as hyperinflation. Iran and Russia are not hyper inflated because inflation rates are lower compared to Venezuela. Iran and Russia's economy experiences devalued currency with inflation, but insignificant compared to Venezuela. With Western imposed sanctions, GDP growth is expected to fall and inflation rates to rise. According to the CIA Factbook, 60% of export revenue is based on oil in Iran and Russia scored similarly to this at 68%. According to the CIA Factbook, Venezuela's export revenue accounts for 98%. These findings in Iran, Russia, and Venezuela resemble one another with shared economic and corruption measurement attributes.



Source: CIA Factbook, Russia "BP" (2018)

Figure 4 Crude Oil Export Revenue %

Figure 4 shows a visual representation of crude oil export revenue on overall GDP in Iran, Russia, and Venezuela. Defined earlier, a country is economically dependent if export revenue accounts for over 50%, and case study countries exceed this. Thus, a common attribute of economic dependence on crude oil is present, which may increase economic volatility in the market. Besides oil, Iran and Russia's export revenue also depends heavily on natural gas.

Volatile economies that are resource-dependent display lower levels of economic growth if Western sanctions are imposed. Economic sanctions are financial penalties to strategically alter decisions to produce a favorable outcome. Iran, Russia, and Venezuela's economies are resource-dependent, relying on exportation to account for GDP, and this may result in lowering economic growth. Common examples include freezing assets, blocking transactions, and

international trade restrictions. Figure 5 will analyze Western sanctions on economic growth in case study countries.

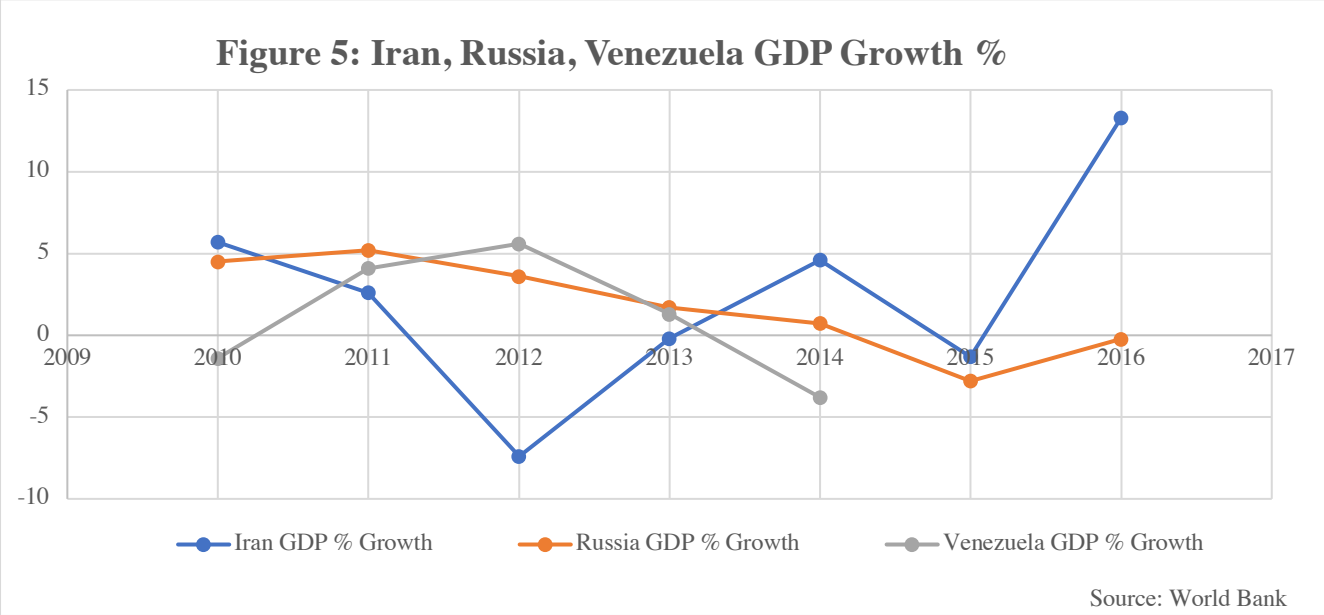


Figure 5: Iran, Russia, Venezuela GDP Growth %

Figure 5: This graph highlights the rise and decline of GDP growth according to the World Bank. Iran's GDP growth declined to -7.4% in 2012 as the regime refused to comply with the nonnuclear proliferation agreement (Nuclear Deal). Once Western sanctions were imposed underdevelopment and lack of technological modernization resulted in the regime filing for an emergency Red Cross relief. In 2015, Russia's invasion of Crimea resulted in Western imposed sanctions, which accounted for -2.8% GDP growth. Furthermore, Western sanctions on Russia were enforced until January 2019, causing an economic backlash. In 2014, Western sanctions were imposed on Venezuela due to the humanitarian violations, thus, resulting in -3.8% GDP

growth. After 2014, GDP was not recorded in the World Bank and could not be graphed in Figure 1.7.

Methods of agreement aim to identify the common factor shared by several occurrences, thus, making this common factor the probable outcome of such shared attributes. Here, the method of agreement is employed by measuring similar attributes within the case study countries: resource-rich capabilities, high corruption, low GDP, economic volatility, and Western sanctions imposed. If these common factors are present in Iran, Russia, and Venezuela, methods of agreement suggest that they may be leading to a shared outcome; in this case, common factors that could result in government adoption of native cryptocurrency.

Iran, Russia, and Venezuela have kleptocratic political systems that revolve around exploiting resource-rich capabilities and corruption for self-serving purposes. These kleptocrats have numerous characteristics in common, such as consolidating absolute power, committing election fraud to secure eternal reign, inefficient state policies, amongst others. Common dysfunctional state behaviors exhibited in the three countries result in paralleled political and economic outcomes, with some variation in the economic sphere.

Precedent history of political instability has resulted in revolutions in these countries – the 1979 Islamic Revolution, dissolution of the Soviet Union, and the Bolivar Revolution. Additionally, high deficit, depreciating currency, and inflation are the most significant factors that incentivize adopting cryptocurrencies. In 2013, the exchange rate between Iranian rial to the dollar was fixated at 25,912 but dramatically increased to almost 33,000 in 2017, and currently

the rial has lost 80% of value. In the wake of increased Western sanctions under President Trump, the rial is expected to continually depreciate.

In times of desperation and economic pressures, Iran is now attempting to salvage the economy by utilizing their native cryptocurrency, even with the United States forbidding exchange. The case is similar in Russia and Venezuela. Russia's ruble has significantly depreciated, but Putin's kleptocracy is developing CryptoRuble to alleviate economic pressures. Venezuela's poor economic policy, extreme hyperinflation, and high amounts of debt led Maduro to adopt the petro. The population has adopted Bitcoin to informally pay for basic goods because the domestic currency is devalued, depreciated, and essentially worth very little.

Kleptocrats have passed various economic policies to relieve these conditions, but few were at all impactful – Maduro raised minimum wage five time causing - inflation, Ayatollah Khamenei's resistance economy plan, and Putin's expansion of the private sector which increased corruption. Ineffective efforts to alleviate long-standing damages to their economies have backfired due to poor execution. Hence, creation of a new national cryptocurrency backed by commodities is appealing, since these countries are resource-rich and have such capabilities. The tight-knit similarities in the political and economic realms explain factors in agreement; highly corrupted statist economies ran by kleptocrats, abundance of resources, limited economic growth, Western sanctions with increased inflation and devalued currency. Iran, Russia, and Venezuela's socioeconomics resemble one another, which explain their joint partnership in developing cryptocurrency.

Table 3: Methods of Agreement and Outcome			
	Iran	Russia	Venezuela
ATTRIBUTES:			
Corruption*	138	138	168
GDP Dependence on Natural Resources	✓	✓	✓
Inflation	✓	✓	✓
Low Economic Growth	✓	✓	✓
Economic Volatility	✓	✓	✓
Depreciated Currency	✓	✓	✓
Western Sanctions	✓	✓	✓
OUTCOME:	PayMon	CryptoRuble	Petro

Table 3: Methods of Agreement and Outcome

Table 3 highlights the agreed attributes and outcome in case study countries: adoption of cryptocurrencies. The inputted numbers in corruption is based on the 2018 Corruption Perception Index. GDP is primarily dependent on oil and natural gas which can form an economically volatile country. Cryptocurrencies is a decentralized market, thus, can contain inflation rates, address economic volatility, and provide an alternative currency free from depreciation. While Iran and Russia experience growing levels of inflation and lower economic growth, Venezuela has severe economic conditions that likely pushed the Maduro administration towards the formal government adoption of a cryptocurrency immediately. In Iran, Western sanctions blocked the petroleum industry, pushing the regime to launch a native government-backed cryptocurrency. However, the Congressional Bill banning Iran's cryptocurrency has caused minor instability, and the fate is unknown. Initial development of cryptocurrencies potentially emerged when Western sanctions became effective.

The petro was created on corrupt pretenses to provide an alternative currency to the bolivar, giving hope to the public, while corruptly and illegally relinquishing Venezuela from immense amounts of debt. Venezuela's long-standing economic conditions has spiraled downwards, leading the Maduro administration to promptly adopt the petro. In comparison to the other countries, Venezuela has the greatest economic dependence on resources, impacted severely by Western sanctions, hyper inflated currency, negative economic growth, and ranked the most corrupt country. However, GDP is not as significant in determining the country's likelihood of adopting to cryptocurrency, the more important distinction lies in GDP growth. Lower levels of economic growth, such as growing inflation rates, devalued currency, and lack of diversification, can lead countries to resort to using cryptocurrencies.

Internationally, there has been growing interest in adopting native cryptocurrencies. In developing resource-rich countries with kleptocracies ruling, the intent for cryptocurrency culminates in efforts to expand power and exploitation. To some extent, Iran, Russia, and Venezuela's kleptocracies view cryptocurrency as a bargaining chip to threaten the hegemonic power of the United States. This is distinguishable in BRICS, a unification of sanctioned countries under one blockchain and currency, due to a shared set of attributes, or a common goal. These kleptocracies have aligned interests in consolidating more power and circumventing Western influence.

Additionally, the technology that encompasses cryptocurrencies, the blockchain, can easily enhance corruption in every socioeconomic sector. Similar corrupt interests and activities occurring in Iran, Russia, and Venezuela can be privately hidden more effectively on a

blockchain, which incentivizes kleptocrats to adopt this system. Iran, Russia, and Venezuela's kleptocracies have common themes of mismanaging resources, and the blockchain can continue illicit state monopolization that is inaccessible. Thus, the corrupt kleptocracy in power intervenes heavily in the political and economic sphere; cryptocurrency and privatized blockchain continue placing more power in the states hand. Because the state fully controls economic policy, this leaves greater room for mismanagement of resources and consequently, lower levels of economic growth. Alongside mismanagement, the economy is highly dependent on resources. Over 50% of export revenue is acquired through petroleum, natural gas, coal, with importation of basic consumer necessities and goods. Iran, Russia, and Venezuela's GDP depend on world commodity prices, as reliance on export revenue is solely generated from resources; these similar attributes increases volatility and allow for potential instability in all three countries. Cryptocurrencies emerge as a potential solution to stabilize conditions politically and economically in kleptocratic countries, while still granting innumerable rights to conduct corrupt behavior.

CONCLUSION:

The main goal of this paper was to analyze factors that may result in the adoption of native government-backed cryptocurrencies in three countries: Iran, Russia and Venezuela. The method of agreement utilized here shows that common attributes displayed in kleptocratic countries are interconnected and influence one another, which makes this research complex but relevant.

Even though Iran, Russia, and Venezuela experienced political revolutions that set forth new regimes, corrupt groups rose to power and continue consolidation of this power at all costs. Unethical and corrupt acts of maintaining power deteriorates the state while damaging the relationship between government and citizens. The main findings of this research are noticeable, shared groups of attributes common in each kleptocratic country; resource-rich capabilities that are heavily exploited, unstable economic conditions such as inflation, Western sanctions that limit international trade and raise inflation, high economic volatility due to lack of economic diversification, and increasing rates of corruption. These factors are interconnected and can impact one another. While these conditions seem to lead to the adoption of native cryptocurrencies, the likely goal is to continue illicit state behavior through a privatized blockchain. This is seen with Venezuela's cryptocurrency, developed for the corrupt purpose to relinquish debt, and Iran's cryptocurrency which will make transactions "untraceable." While Iran and Russia do not experience hyperinflation or negative economic growth to the extent of Venezuela, inflation and lower levels of economic growth are present, and recent sanctions could

change this. Iran is launching their native cryptocurrency and Russia is developing, given some hurdles, with Russia on the forefront due to advanced cyber capabilities.

Globalization has directed us towards a new era of digital currency. Digital currency and cyber security are emerging fields with great relevance, therefore, future research is necessary. Digital currency will be prevalent in the future, but research is required regarding the application. Companies, such as Apple and Google, have transferred to a blockchain, however, a country's economy is quite different. This thesis was written during the preliminary stages of cryptocurrencies and blockchain within countries. It is still difficult to obtain data on cryptocurrencies, due to limited accessibility. These limits placed restrictions on the comparative method, which can be further explored in future research. Additionally, recent sanctions imposed by President Donald Trump should be examined in future research; these sanctions specifically targeted Iran's petroleum industry, which resulted in Iran launching their native government-backed cryptocurrency. Given that Iran and Russia have developed their native government-backed cryptocurrency, future research will need to analyze the subsequent effects of adoption.

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