Spring 5-20-2019

Nation State Involvement in Cryptocurrency and the Impact to Economic Sanctions

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MS Economic Crime Forensics

Capstone Spring 2019

[*] Special thanks to my academic advisor Dean Henry and the program director Margaret McCoey for their continued support and encouragement throughout the Economic Crime Forensics (M.S.) program at La Salle University.

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Executive Summary

With all the terms and evolving definitions of distributed ledger technology, blockchain, cryptocurrency, and digital currency, it is no wonder they have caused disruption and confusion to the current state of economic sanctions. Sanctioned individuals and countries may actively seek to evade the regulatory oversight of transactions that are completed in the United States dollar using cryptocurrency. The United States and the United Nations have used economic sanctions as a tool of encouragement, and punishment, for decades in the traditional banking and financial services space. Cryptocurrency has not easily fallen under this regulatory environment due to its decentralized nature, and bad actors have taken advantage of the lack of oversight. Financial institutions and money service businesses have been actively involved through regulations in sanctions evasion prevention, anti-money laundering, and the prevention of terrorist financing for decades. Governments have not been quick to adopt these same regulations for cryptocurrency exchanges. This paper focuses on the Democratic People's Republic of Korea, their sanctions, and how the country has entered the cryptocurrency space. In addition, it explores how the United States has used economic sanctions in the past, how it has tackled regulation of cryptocurrency and sanctions, and how certain countries have responded.

North Korea Historical Overview

Since the armistice agreement at the 38th parallel in 1953, North Korea has had increased tensions with the United States and most of the world. Dictators Kim Il-Sung, Kim Jong-Il, and present-day Kim Jong-Un of the Democratic People's Republic of Korea (DPRK or North Korea) have deemed nuclear weapons as their sole means of survival. (Albert, 2019). North Korea is seen as an unstable nation with state sponsored activities that include labor camps (Central Intelligence Agency (CIA), n.d.); narcotics production and distribution (methamphetamine, fentanyl, and even counterfeit Viagra) (Gollom, 2017); counterfeit cigarettes (Salmon, 2016); arms trafficking (Laville, 2017); cybercrime (Dorell, 2017); and other more mundane money generating schemes such as international art sales (Wong, Vagnoni, & Potkin, 2017); and giant sculptures (BBC, 2016).

Although the country believes in self-sufficiency through *juche*, they still need a way to transact with the outside world for necessary goods in a globalized economy. A website for The Democratic People's Republic of Korea says Juche Ideology means in part:

> …maintaining an independent and creative standpoint in finding solutions to the problems which arise in the revolution and construction. It implies solving those problems mainly by one's own efforts and in conformity with the actual conditions of one's own POLITICS country. The realization of independence in politics, self sufficiency in the economy and self-reliance in national defence is a principle the Government maintains consistently. (Korean Friendship Association, n.d.)[1]

[1] Note: There is debate about whether this site is run by the DPRK as "soft propaganda" or run independently by a Spaniard as the President of the Korean Friendship Association. Either way, this website is considered one of the few primary sources of information on the internet for North Korea.

This doctrine is the ideology that the North Korean people can complete all tasks on their own, without assistance from other people or nations. In a global economy and a rapidly changing world, this is not the case.

Modern U.S.-DPRK Relationship

Even though a peace treaty has never been signed with North Korea, the United States has been in talks for decades with the country. The first agreement towards denuclearization between the two countries occurred in 1994. Talks with the United States, United Nations, North Korea, and others took place from 2003 to 2009. (U.S. Department of State, Bureau of East Asian and Pacific Affairs, 2018). Despite these talks and promises of de-escalation, the country has continued to develop and test weapons of mass destruction, intercontinental ballistic missiles, and nuclear weapons, some of which can reach the United States. (Nuclear Threat Initiative, 2019). In February 2012, the country said it agreed to stop long range missile launches and nuclear activity in exchange for 240,000 metric tons of food aid from the United States. (Crawford, 2012). One year later in February 2013, North Korea conducted its third nuclear test in defiance of the United Nations and United States. (CNN Library, 2019). In March 2014, North Korea fired hundreds of artillery rounds into the sea across the border separating North and South Korea. (Mckirdy & Kim, 2014). At the beginning of 2016, DPRK said it successfully tested a hydrogen bomb, and nine months later stated they detonated a nuclear warhead. (CNN Library, 2019). While these acts of aggression continue, the United States has maintained its willingness to negotiate with the country. In the meantime, and while the world waits for a peaceful conclusion, the United States and United Nations have relied on economic sanctions as punishment against the Democratic People's Republic of Korea.

Economic Sanctions as a Tool of Encouragement

One of the many tools the United Nations and the United States have to combat dictators and oppressive governments is economic sanctions. Economic sanctions are the "withdrawal of customary trade and financial relations for foreign and security policy purposes." (Masters, 2017).

The United Nations through the UN Security Council has imposed varying types of sanctions on DPRK since 2006. The economic sanctions include prohibition of exports (prohibits countries from purchasing items from DPRK) including: minerals, oil, statues, coal, iron, agricultural products, and helicopters. The import sanctions (prohibits countries from selling to DPRK) include: aviation fuel, military equipment, transport vehicles, luxury goods, communications equipment, and oil. The UN has steadily increased sanctions on North Korea following every nuclear missile test they have conducted. (Albert, 2019).

For the United States, Treasury Department's Office of Foreign Asset Control or OFAC administers economic sanctions. OFAC was officially created in 1950 as a response to China entering the Korean War (as an ally of the North) in order to block or freeze all Chinese and North Korean assets within U.S. jurisdiction. (U.S. Department of Treasury, 2019). The United States North Korean sanctions list encompasses more entities and people than the United Nations sanctions. Beginning in 1998 and until 2008, the U.S. listed North Korea as a state sponsor of terrorism, a designation that prohibited almost all transactions with the country. The country remained off the list until November 2017 when tensions escalated around nuclear testing and the assassination of Kim Jong-un's brother. (Albert, 2019). A year and a half prior, in February 2016, the North Korea Sanctions and Policy Enhancement Act was passed. This Act allows the Treasury Department and the President to sanction individuals and entities that are involved in DPRK's mineral or metal trade; and sanction those who provide support to persons sanctioned by the UN. (The National Committee On North Korea, 2016). It also led to the country being designated a jurisdiction of "primary money laundering concern." (U.S. Department of Treasury, 2016). This special designation requires banks to take additional steps in preventing money from flowing to North Korea from correspondent bank accounts. In addition to this responsibility, all U.S. financial institutions (or those registered in the U.S.) must follow OFAC sanctions laws. If a bank is found to process even one transaction in violation of OFAC, there can be severe fines and penalties. Not only banks, but all U.S. citizens, resident aliens, and U.S. registered corporations (public or private), regardless of their location, are required to comply with OFAC sanctions. (U.S. Department of Treasury, 2019). These relationships can be complicated, but it does not prevent the Department of Justice from going to extreme lengths to identify companies that work with or assist North Korea in evading sanctions. (Lynch, 2017).

Into 2018, the battle between North Korea and the United States continued. In February 2018, U.S. Vice President Mike Pence announced in Japan that the United States would impose the toughest sanctions ever over North Korea's nuclear programs. (Landler, 2018). Just a few months later, North Korean state media announced the United States planned to lift sanctions against the country after talks occurred between the two countries; this statement greatly contrasted to what was announced in the U.S. regarding possible steps forward. (Sharp, 2018). A lot of progress was made through talks with DPRK in 2018 to reduce the number of missile and nuclear tests but the U.S. maintained that sanctions must stay in place until the country is denuclearized. (Brunnstrom & Mason, 2018).

These sanctions have led to extreme financial hardships for North Korea. The currency of trade around the world is traditionally the United States dollar; however, since their assets are blocked and there are few willing trade partners, they seek alternative financing. In addition to the criminal activities previously mentioned, the country is actively involved in state sponsored cybercrime. Even though they are not always successful, the DPRK hacking army has more than 6,000 people. They successfully stole $81 million during an attempt to steal $1 billion from an account belonging to Bangladesh at the U.S. Federal Reserve. The country also unleashed a ransomware attack, and has ventured into the world of stealing cryptocurrency. (Sanger, Kirpatrick, & Perlroth, 2017).

Cryptocurrency

In terms of the economy and finance, cryptocurrency is a recently developed word and concept. At one point in time, currency (as in cash or coin), was either made of precious metals or backed by precious metals. Today, most currency has no inherent value; it only has value because we believe it has value and it is used through a system of trust. (Tillier, 2018). Cryptocurrencies have an exchange value to other currencies because people believe and trust they have value. There are two primary differences between cryptocurrency and “fiat currency”.[2] (Chen, 2019). The first is that cryptocurrencies traditionally were not issued by any government but instead are tracked by computers and algorithms. There is no physical representation of

[2] Fiat Money is: currency that a government has declared to be legal tender, but it is not back by a physical commodity. (https://www.investopedia.com/terms/f/fiatmoney.asp)

cryptocurrency that has any worth such as paper bills or metal coins. The users and their computers record all transactions through blockchain or "peer-to-peer" technology.[3] Second, the actual amount of any cryptocurrency is limited; not the value but the number of "coin" of a cryptocurrency. During an Initial Coin Offering, the company may state there will be 1 million coins; after the offering, the creators cannot go back in the blockchain and add in more coin. This is a major difference because no more of one type of coin can ever be created, and there will never be such a thing as inflation for a cryptocurrency. (Tillier, 2018). As the perceived value of a cryptocurrency goes up, owners will experience deflation, meaning that what used to cost one "coin" may now cost half a "coin". This is because of the finite number of coins issued; creating more of the currency is impractical which is what causes inflation for fiat currencies.

At the end of January 2018, one source cited there are 1,300 cryptocurrencies in existence, (Tillier, 2018), a month later an article listed the number jumping to 1,500. (NewsBTC, 2018). Cryptocurrencies are bought and sold on any of the numerous exchanges, some of which act outside of the regulatory environment that financial institutions are a part of. These exchanges hold wallets (or accounts) of coin for trading and can exchange fiat currency for cryptocurrency or exchange different types of cryptocurrencies for others. In addition to these digital currencies seeming like a popular fad, they are extremely volatile. For example, Bitcoin (one of the oldest and most well-known coins) was valued at about $750 on December 1st 2016, on December 17th 2017, the value was at $19,300, and about a month later, in early February 2018 one Bitcoin was worth about $7,300. (CoinMarketCap, n.d.). In December 2018 Bitcoin

[3] Blockchain is defined as "a digital database containing information (such as records of financial transactions) that can be simultaneously used and shared within a large decentralized, publicly accessible network." (https://www.merriam-webster.com/dictionary/blockchain)

slid down to under $4,000. (Cuthbertson, 2018). Even at these large price swings, Bitcoin is not one of the most volatile coins and others skyrocket and fall at a much quicker pace.

As of February 2018, there was a reported market value of about $700 billion worth of global crypto. (Brown, 2018). Ten months later in October 2018, the total market capitalization of cryptocurrencies was around $200 billion. (Rooney, 2018). The cryptocurrency market is largely free from government interference, watchdogs, and regulators, making it open to manipulation, pump and dump schemes, and fraud. (Coleman, 2018). Cryptocurrency exchanges are numerous and many do not properly identify their account holders resulting in great anonymity for traders. This discussion on the market cap of cryptocurrency emphasizes the volatility and difficulty of estimating the worth of any coins. Establishing how much one person, or nation state, holds of any cryptocurrency is extremely difficult because the value changes so rapidly.

Sanctions Enforcement, Reporting, and Financial Institution Involvement

While OFAC has been in force since the 1950s, having the participation of the private sector involved more directly in the prevention of money laundering, terrorist financing, and sanctions compliance has been more recent. In January 2018, the Acting U.S. Attorney for the Southern District of New York made the following statement after a jury trial and conviction against a banker for sanctions violations, “Foreign banks and bankers have a choice: You can choose willfully to help Iran and other sanctioned nations evade U.S. law, or you can choose to be part of the international banking community transacting in U.S. dollars. But you can’t do both.” (Department of Justice U.S. Attorney's Office Southern District of New York, 2018). This statement summarizes the severity and breadth of power the United States Department of Justice has in prosecuting those who violate sanctions and OFAC requirements.

In 1970, the U.S. passed the Bank Secrecy Act (BSA), this act establishes requirements for recordkeeping and reporting by financial institutions. It also requires banks to report cash transactions over $10,000, identify individuals who are conducting transactions, and maintain records. These records could then be used or subpoenaed by law enforcement in order to identify transactions that were part of illegal activity or in violation of sanctions. In the late 1980s and early 1990s, money laundering became a greater concern with the cocaine trade and international drug trafficking between North and South America. In 1992, an additional bill went into law, the Annunzio-Wylie Anti-Money Laundering Act. This Act strengthened the consequences for BSA violations, required Suspicious Activity Reports (SARs) and eliminated the use of Criminal Referral Forms. (Financial Crimes Enforcement Network, n.d.).

Two years later, the Money Laundering Suppression Act was passed. This act required federal regulators to develop AML (anti-money laundering) examination procedures and required Money Service Businesses (MSBs) to have a real beneficial owner (entity or individual) on file. Additionally, it made operating an unregistered MSB a federal crime, and recommended that states also create laws regulating MSBs. According to FinCEN (Financial Crimes Enforcement Network, a division of the U.S. Department of Treasury), Money Service Businesses include: currency dealers or exchangers, check cashers, issuers of travelers checks or money orders, redeemers of traveler's checks or money orders, money transmitters, and the U.S. Postal Service. (Financial Crimes Enforcement Network, n.d.). Understanding this background is key to the current interpretation of what an MSB is in relation to cryptocurrency. The last major piece of AML legislation passed in the 1990s was the Money Laundering and Financial Crimes

Strategy Act of 1998. This legislation required the Department of Treasury to develop a National Money Laundering Strategy. (Financial Crimes Enforcement Network, n.d.).

In the beginning of the 21st century, the terrorist attacks on September 11th, 2001 acted as a catalyst for a large uptick in legislation covering everything from how you purchase a plane ticket to money laundering and financial crimes investigations. The Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (or the USA PATRIOT Act) provided significant increases in power to the federal government to combat money laundering and terrorist financing. One section, Title III, is the International Money Laundering Abatement and Financial Anti-Terrorism Act. This section criminalized the financing of terrorism and increased BSA customer identification procedures, prohibited business with foreign shell banks, and increased enhanced due diligence procedures for private banking accounts. It also improved information sharing between banks, expanded AML program requirements, increased civil and criminal penalties for money laundering, required prompt response of requests for information from banks, and required AML to be a consideration during approvals of bank mergers and acquisitions. (Financial Crimes Enforcement Network, n.d.).

In 2004, additional legislation was passed with the Intelligence Reform & Terrorism Prevention Act of 2004. This bill amended the BSA to require the Secretary of Treasury to have regulations regarding cross-border electronic transfers and for them to be treated in a similar manner to wire transfers. This added electronic transfers to the category of those funds which require enhanced monitoring for money laundering and terrorist financing. (Financial Crimes Enforcement Network, n.d.). These laws and regulations regarding money laundering, sanctions, and terrorist financing are building blocks that can be used to implement regulation of cryptocurrency exchanges.

Regulation of Cryptocurrency Exchanges

As mentioned above, cryptocurrency can be bought, sold, and traded on cryptocurrency exchanges. The rapid development of the field has resulted in an unstable regulatory environment where different agencies and governments have struggled to keep up in the United States and abroad. Two departments that fall under the Department of Treasury are of importance in this topic, FinCEN (Financial Crimes Enforcement Network) and OFAC (Office of Foreign Asset Control). FinCEN was established in 1990 and currently is a primary agency "…to oversee and implement policies to prevent and detect money laundering." (Financial Crimes Enforcement Network, n.d.). FinCEN works in oversight of banks and other financial institutions to ensure compliance with the Bank Secrecy Act and acts as the data gathering location for suspicious movements of money. While FinCEN primarily focuses on intelligence and analytics, OFAC:

> …administers and enforces economic and trade sanctions based on US foreign policy and national security goals against targeted foreign countries and regimes, terrorists, international narcotics traffickers, those engaged in activities related to the proliferation of weapons of mass destruction, and other threats to the national security, foreign policy or economy of the United States. (U.S. Department of the Treasury, 2019).

In March, 2013, FinCEN originally published guidance on virtual currencies. This guidance established definitions of virtual currency and explanations of a user, exchanger, and administrator of virtual currency. FinCEN distinguishes virtual currency from real currency by stating that "virtual currency does not have legal tender status in any jurisdiction". (Financial Crimes Enforcement Network, 2013). The three types of participants and their definitions in relation to cryptocurrency are important. A "user" of convertible virtual currency "uses it to purchase real or virtual goods or services is not an MSB" according to FinCEN. (Financial Crimes Enforcement Network, 2013). This means that users of the currency are not subject to the various regulations required for MSBs by FinCEN. This contrasts to administrators and exchangers because administrators engage as a business in issuing cryptocurrency, and exchangers act as a business in either exchanging virtual currency for other types of virtual currency or exchanging virtual currency for real currency. In summary, exchangers and administrators are subject to implementation of Bank Secrecy Act and other regulations, such as the USA PATRIOT Act, because they are designated as an MSB by FinCEN. (Financial Crimes Enforcement Network, 2013).

In March 2018, OFAC published a series of questions and answers related to virtual currency. These questions and answers include the definitions of virtual and digital currency (also referred to as cryptocurrency), OFAC compliance obligations for digital currency, and strategies to identify blocked digital currency addresses. (U.S. Department of the Treasury, 2019). In June 2018 they added two more questions about the structure of digital currency addresses on the SDN (Specially Designated National) list and how to search for those addresses through OFACs resources. A cryptocurrency address or wallet is identified through a unique key that is up to 256 characters in length. Although these addresses or wallets do not always hold personal identifiable information such as name, location, or date of birth, OFAC and law enforcement personnel have been able to tie addresses to illegal or sanctioned activity. Exchanges in the United States and exchanges who deal in USD, and exchanges who are under the jurisdiction of OFAC by other means need to screen wallet addresses and individuals using their exchange. (U.S. Department of the Treasury, 2019). An example of an identified and blocked virtual currency address and exchange are below in Figure 1.

"EnExchanger" (a.k.a. GHORBANIAN, Mohammad; a.k.a. GHORBANIYAN, Mohammad; a.k.a. "Ensaniyat"; a.k.a. "Ensaniyat_Exchanger"), Iran; DOB 09 Mar 1987; POB Tehran, Iran; nationality Iran; Website www.enexchanger.com; Email Address EnExchanger@gmail.com; alt. Email Address Ensaniyat1365@gmail.com; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male; Digital Currency Address - XBT 1AjZPMsnmpdK2Rv9KQNfMurTXinscVro9V; Identification Number 008-046347-9 (Iran); Birth Certificate Number 32270 (Iran) (individual) [CYBER2].

Figure 1. Example of the text for an identified and blocked virtual currency exchange by OFAC. The currency address starts with XBT (stands for Bitcoin) and provides an address of the exchange in addition to other information. The exchange and individual are subject to sanctions involving Iran, meaning that it would be a violation of OFAC regulations to do business with this exchange and person.[4] (Office of Foreign Assets Control, (OFAC), n.d.).

The decentralized nature of cryptocurrency means that exchanges can operate nearly anywhere in the world, even out of personal homes, as long as there is enough electricity and internet to power the amount of energy involved in the processing. Even if all exchanges had Know Your Customer and sanctions enforcement programs, some bad actors will still find ways to transact cryptocurrency without oversight. One way individuals can hide their crypto transactions is through a service called “tumbling”. (Redman, 2016). Tumbling shuffles transactions in order to mask the originators of funds in an anonymous way. This is available

[4] Accessed January 16, 2019.

through services that advertise records are only kept for a short amount of time, and no accounts are ever needed. With names such as “Bitcoin Laundry”, the websites do little to hide the type of person they are marketing to for the service. (Bitcoin Laundry, 2019).

The Law Library of Congress provides an extraordinary and detailed look at the “Regulation of Cryptocurrency Around the World” in a 131-page document covering 130 countries that was published June 2018. At the time of publication, there were eight countries with an absolute ban on cryptocurrency, and 15 countries with an implicit ban, including Iran. Only five countries (Australia, Canada, Denmark, Japan, and Switzerland) had regulations specifically covering both tax implications and anti-money laundering regulations of cryptocurrency. There are some countries that ban Initial Coin Offerings (China, Macau, and Pakistan) and some that ban local activity but permit their citizens to engage in cryptocurrency exchanges abroad (Bahrain and Qatar). The inconsistent approach to cryptocurrency regulations around the world is highlighted by the varying terms countries use in their legislation, including: cryptocurrency, digital currency, virtual commodity, crypto-token, payment token, cyber currency, electronic currency, and virtual asset. (The Law Library of Congress, 2018).

Sanctioned Nation States and their Involvement in Cryptocurrency

As the United States, the U.N., and other governmental bodies impose economic sanctions on nation states, sanctioned governments seek other ways to participate in the global financial system. While North Korea is detailed the most in this piece, other countries have ventured into the cryptocurrency space, but not all of them for the purpose of evading sanctions. At least three countries that are not subject to sanctions have announced plans to issue state backed cryptocurrencies: Cambodia, Estonia, and the Republic of Marshall Islands. (Congressional Documents and Publications, 2018). The monetary authority for eight islands in the Caribbean, the Eastern Caribbean Central Bank, announced their intentions to develop a digital currency. (The Law Library of Congress, 2018). Some sanctioned countries, including Iran, Russia, and Venezuela, have all entered into cryptocurrencies, sometimes individually and on occasion as a joint effort.

Iran

Iranian economic sanctions date back to after the hostage crisis in 1979 when the U.S. froze $12 billion in U.S. dollar assets belonging to Iran across the globe. In 1987 and 1995 more economic sanctions were imposed on Iran through sectors including petroleum development. Then in 1997 the U.S. imposed broader sanctions against any trade or investment with the country. Again in 2010, the U.S. passed comprehensive Iranian sanctions, barring permission to import food, carpets, and other goods from Iran and barring exports of goods or services to Iran except for very limited circumstances. (Levs, 2012).

Sanctions became even more rigorous throughout 2011 and 2012 including the authorization of sanctions on third party countries if they do not decrease their imports of Iranian oil. (Sen, 2018). In November 2013, a Joint Plan of Action was agreed upon by Iran, the United States, and other parties to begin a process of lifting and suspending of some sanctions in exchange for nuclear oversight by the United Nations. (U.S. Department of the Treasury, 2013). During the next few years there was a significant amount of back and forth between Iran and the U.S. ultimately resulting in the reimplementation of certain sanctions against Iran in August 2018. (The White House; Trump, Donald J, 2018). On December 17, 2018 a Bill was introduced in the United States House titled “Blocking Iran Illicit Finance Act”. (Rep. Gallagher, H.R.7321 - Blocking Iran Illicit Finance Act, 2018). This Bill included a section specifically addressing Iranian digital currency and requested the executive branch to impose sanctions on all foreign persons that engage in the facilitation, purchase, sale, or transmission of, Iranian digital currency. (Rep. Gallagher, H.R. 7321 Blocking Iran Illicit Finance Act - Title III Section 304, 2018).

In January 2019, the Iranian central bank issued enhanced guidance on the prohibition of using global cryptocurrencies inside the country as a method of payment. They lifted the ban on cryptocurrency exchanges, initial coin offerings, and cryptocurrency mining. (Motamedi, 2019). Four banks in Iran along with Iranian authorities announced an effort to collaborate on a digital coin backed by gold, called the PayMon. (Financial Tribune, 2019). Even though this coin is still in early development, there are some commentators that believe the coin could become more successful than the Venezuelan Petro due to Iran’s general stability and close partnerships with countries like Russia and China. (Baker, 2019). This is further supported by an agreement at a conference in Armenia in November 2018 where Iran signed a trilateral agreement with Russia and Armenia on blockchain cooperation. (Motamedia, 2019).

Russia

Even though some Russian individuals or entities have been subject to economic sanctions for decades, the country did not face widespread economic sanctions until July 2014. (Smith, 2018). These sanctions were the result of the annexation of Crimea by Russia and done in conjunction with sanctions imposed by the European Union. There were approximately seven sanctions related publications by the U.S. Treasury Department that dealt with Russian sanctions and their occupation of Crimea in 2014. (U.S. Department of State, 2019). In December 2018, the U.S. Department of State reiterated that, “The United States is committed to holding the Russian government accountable for its destabilizing activities around the world, including its efforts to subvert Western democratic processes and institutions through cyber-attacks and disinformation, support for the Assad regime in Syria, flagrant violations of human rights, use of violence against opponents at home and abroad, and other malign behavior.” (U.S. Department of State, 2018).

In October 2017, Russian President Vladimir Putin announced that the country will issue its own “CryptoRuble”. (Buck, 2017). This announcement came only five days after President Putin warned against the risks of cryptocurrency, stating that risks include “…opportunities to launder funds acquired through criminal activities, tax evasion, even terrorism financing, as well as the spread of fraud schemes.” (RT, 2017)[5]. In March 2019, U.S. Department of the Treasury announced sanctions on a Russian bank (Evrofinance Mosnarbank) in part for the bank’s involvement in the Venezuelan Petro cryptocoin. Treasury reported that early investors in Petro wired funds to an account owned by the Venezuelan government at Evrofinance in Moscow. (U.S. Department of the Treasury, 2019).

Venezuela

The first economic sanctions imposed against Venezuela were established in 2005 for the country’s failure to cooperate in counter-narcotics efforts. In 2008, sanctions led to asset freezing and prohibitions on transactions with specific entities and individuals in Venezuela for providing support to Hezbollah. Additional sanctions for human rights violations were imposed throughout

[5] Critics point to RT as being a tool of Russian propaganda; RT insists that it is no different than other state-run media companies such as the BBC. (Russia’s RT Network: Is It More BBC or K.G.B.?, New York Times, 2017). https://www.nytimes.com/2017/03/08/world/europe/russias-rt-network-is-it-more-bbc-or-kgb.html

2014 and 2015. In 2017 and 2018 at least 58 individuals had additional sanctions put on them; this included President Nicolas Maduro, members of the Supreme Court, and many other high-ranking government and military officials. In August 2017 through Executive Order, the United States prohibited broad access to the U.S. financial markets by the Venezuelan government and their state-owned oil company. One month after the introduction of the country's newly created cryptocurrency, the Petrocoin, an additional sanctions Executive Order was signed in April 2018 prohibiting transactions dealing with the country's new digital currency. (Sullivan, 2019).

The conditions in Venezuela deteriorated further with political uprising and unstable attempts to transfer executive power. On January 25, 2019 an amendment to Venezuelan sanctions was passed which expanded "the definition of 'Government of Venezuela' to include persons that have acted, or have purported to act, on behalf of the Government of Venezuela, including members of the Maduro regime …" (U.S. Department of the Treasury, 2019). While previous sanctions against Venezuela named specific individuals implicated in human rights abuses, the sanctions written in January 2019 include all members of the regime of disputed leader Nicolas Maduro.

Venezuela's Petro digital currency introduced in February 2018 was launched through an Initial Coin Offering (ICO) hosted by the country's treasury department. (Berman, 2018). Initially, an Indian crypto exchange was supposed to host the ICO, but decided to close following a hack of Bitcoin worth approximately $3.3million at the time. (Zachary, 2018). In addition to the government website, Venezuela authorized six cryptocurrency exchanges to sell and exchange the Petro. These exchanges are: Afx Trade, Bancar, Cryptia, Criptolago, Amberes Coin, and Cave Blockchain. (Pepi, 2018). Afx Trade, Bancar, Cryptia, Criptolago, Amberes Coin, and Cave Blockchain are all based out of Venezuela. (AFX, n.d.) (Bancar, n.d.) (Cryptia

Exchange, n.d.) (CriptoLago, n.d.) (AmberesCoin, n.d.) (Gremio en La República Bolivariana de Venezuela, 2018).[6]

Nicolas Maduro announced on February 20, 2018 that the first day of pre-sale of the Petro resulted in the country receiving $735 million, although there was no evidence or details concerning this figure. (Pons & Gupta, 2018). Venezuela stated the Petro would be tied to the price of one barrel of Venezuelan crude oil, backed by reserves in an area of the country near a town called Atapirire; however, an investigative report discovered little activity in the area with evidence of this. (Ellsworth, 2018).

As of January 2019, the government of Venezuela still maintains a website advertising purchase of the Petro with Bitcoins and Litecoins. (Gobierno Bolivariano de Venezuela, 2018). There is a scrolling ticker at the top of the website showing purported exchange rates to Euro (52.03), Chinese Yuan (400.58), Russian Ruble (3,928.00), and even the U.S. dollar (59.50).[7] (Gobierno Bolivariano de Venezuela, 2018). There is also a link to a 14-page whitepaper in English which covers topics such as the technology, uses of Petro, the number coins (100,000,000), and tech support. (Gobierno Bolivariano de Venezuela, n.d.). Figure 2 below shows examples of uses of Petro from the Venezuelan Government published whitepaper.

[6] Note: The website of Cave Blockchain, https://www.caveblockchain.com, was inaccessible at the time of this writing.
[7] Ticker prices are as of January 30, 2019.

Figure 2. This diagram is found on page three of the Venezuelan whitepaper on their Petro coin showing the different advertised uses.[8] (Gobierno Bolivariano de Venezuela, n.d.).

North Korea's Theft of Cryptocurrency Exchanges

DPRK has been involved in cybercrime for many years, but their hacking of cryptocurrency exchanges is fairly new. The first reported hack of a crypto by DPRK was reported in February 2017. An exchange called Bithumb was hacked for around $7million worth of cryptocurrency. (Lielacher, 2018). Later in the year, North Korea was blamed for hacking of the exchange YouBit, which later went bankrupt from losing 17% of its assets. (Rhett, 2017). In May 2017, North Korea conducted the WannaCry Bitcoin ransomware attack, earning at least

[8] Found on Page 3 of the English whitepaper retrieved January 30, 2019. The only version currently available at https://www.petro.gob.ve/whitepaper_eng.html is in Spanish.

$120,000 USD worth of Bitcoin in exchange for unlocking victims' systems. (Collins, 2017). Other sources cite that DPRK obtained 11,000 Bitcoins in 2017; because of the volatile nature of Bitcoin this has been worth anywhere from $39.9 million to $210 million.[9] (CoinMarketCap, n.d.) (Tassev, 2018). More recently, North Korea is a primary suspect in the heist of a coin called NEM from the crypto exchange Coincheck located in Japan. On January 26th 2018 hackers stole $526 million worth of NEM which has since been traced back to North Korea. (Suzuki, 2018). On that day, NEM was worth about 83 cents each and on March 7th 2018, one NEM coin was worth about 34 cents each; up to April 2019, the price has not recovered to the pre-hack price. (CoinMarketCap, n.d.). One international cyber security company, Group-IB, published that five cryptocurrency exchange attacks are linked to Lazarus, a North Korean state sponsored hacking group. (Group-IB, 2018). These cyber attacks tied back to North Korea are not the only thing showing the country has a growing interest in the field.

A website associated with DPRK posted that from April 18th to April 25th 2019 there will be a Blockchain and Cryptocurrency Conference in Pyongyang. (Korean Friendship Association, 2019). The introduction of the event says: "International experts in the Blockchain and Crypto industry will gather for the first time in Pyongyang to share their knowledge and vision, establish connections and discuss business opportunities." There is an itinerary that lists visits to houses, museums, the DMZ (demilitarized zone), schools, and monuments. Day four of the event consists of visiting Tower of Juche, skating, bowling, and shopping. Day five and six are the only two days listed that cover blockchain and cryptocurrency. The price for this event is listed in Euro's at €3,300 per person, and interestingly the price of internet is listed in U.S. dollars at $5 per hour. (Korean Friendship Association, 2019).

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[9] As of February 17, 2019, 1 Bitcoin was worth $3,632.30. https://coinmarketcap.com/currencies/bitcoin/

Determining the values of the amount of USD worth of cryptocurrency held by North Korea fluctuates so wildly from day to day that their holdings are difficult to establish. A panel of experts to the UN Security Council in March 2019 reported that North Korea cyber-attacks and thefts have resulted in the country amassing approximately $670 million in foreign and virtual currency. (Yoshida, 2019). When a coin has a major theft, such as NEM, the value of that coin falls and may be out of sync compared to the market volatility of other coins. Generally, large-scale hacks by anyone of a coin from an exchange creates volatility and the price may fall drastically. This response from the crypto market will likely result in a change of behavior from North Korea. In order for their hacks to be financially successful, they need to go unnoticed, steal enough to make a difference to their own wallets, but not so much that it creates a rapid fall in the coin's value. This reaction from North Korea may result in more numerous small value cryptocurrency heists and less large one-time thefts in order to cause less disruption.

Potential Next Steps for North Korea Sanctions

It is difficult to determine whether economic sanctions against North Korea are working, and opinions vary on their effectiveness, but the country is showing signs of economic distress. (Kim, 2019). The U.S. government points to the country's reduced imports and exports as evidence the sanctions are working. (Rappeport, 2019). Due to economic sanctions being driven by executive order, they change quickly between administrations and sitting presidents.

In March 2018, North Korea announced they were willing to talk to the U.S. and South Korea about ending their nuclear weapons testing and President Trump attributed this to the recent harsh sanctions that have been imposed on the country. (Berlinger & Kim, 2018). North

Korea and other countries have had talks before, but this is the first time North Korea came forward with the idea that they would halt all tests during negotiations. The DPRK regime led by Kim Jung-un has been forced to seek alternative means of trade and currency since the intense sanctions have been in place. From this point forward, it will be a large decision of the United States to either maintain all sanctions and possibly drive DPRK to the unregulated crypto markets or lessen sanctions just enough to bring them back into the regulated economy.

Upcoming Legislation and Predictions for Cryptocurrency Regulation

In June 2018, the fifth European Union Anti-Money Laundering Directive was published requiring member states to have updated regulations and laws in place by January 2020. (Krais, 2018). Among other items, the Fifth EU AML Directive aims to bring exchanges of fiat to cryptocurrency under the same regulatory umbrella as banks and other financial institutions. (Montegriffo, n.d.). This will require the exchanges to follow Know Your Customer (KYC) rules, have anti-money laundering programs, compliance training, and a robust sanctions enforcement program. Other sources are quick to point out that while the new Directive addresses fiat-to-crypto exchanges, it does not address cryptocurrency only exchanges, where only different types of coins can be exchanged but not fiat currency. (CryptoDigest News, 2019).

In March 2019, Brookings published a document explaining why cryptocurrency regulation needs strengthening; the document mentions cryptocurrency being used to circumvent sanctions as a primary risk. (Mass, 2019). One United States Air Force Officer believes the United States “should establish a cryptocurrency task force across relevant government departments and agencies to identify solutions…as they pertain to illicit state, corporate, and criminal transactions". (Konowicz, 2018). An article in the International Financial Law Review argued that the "decision to blacklist cryptocurrency addresses could backfire and drive investors to smaller, less transparent exchanges." (Jackson, 2018). A cryptocurrency research group, Chainalysis, published three predictions for compliance in 2019. (Levin, 2019). They predict that cryptocurrency will be used more increasingly as "regtech", meaning that financial institutions may turn to using blockchain technology or their own cryptocurrency to combat costs associated with anti-money laundering and other compliance requirements.[10] (Isidore, 2019). The second prediction is that cryptocurrency will play an important role in sanctions enforcement. The group says that because of the "traceable architecture" of blockchain, cryptocurrency should be able to easily identify sanctions evasion techniques. The third prediction is that as Asian countries strengthen their anti-money laundering regulations and enforcement, they will work closer with other countries to combat illicit movements of cryptocurrency on a global scale. (Levin, 2019).

Even though there are calls for increased cryptocurrency regulation, not all groups believe the digital coin world is a growing economy. The top predictions for cryptocurrency in 2019 by Kaspersky Lab include a decrease in the use of cryptocurrency as a means of payment because of commissions, slow transfers, and not enough users. They also predict there will not be a return to the extremely high exchange rates that were seen in 2017; Kaspersky predicts the number of people interested in purchasing cryptocurrency is limited, and currently that ceiling has been reached. (Malanov, 2018). The amount of Bitcoin used for payments on 17 of the largest cryptocurrency processors fell to $60 million for the month of May 2018, down significantly from a high of over $400 million in September 2017. (Kharif, 2018). This shows a

[10] Note: There is already evidence of this happening as JP Morgan Chase announced the creation of its own cryptocurrency, the JPM Coin, to enable cross account transfers for international institutional customers in record time. https://www.cnn.com/2019/02/14/investing/jpmorgan-jpm-coin-cryptocurrency/index.html

dramatic decrease in cryptocurrency processing for payments in less than a year, which may continue throughout 2019.

The FATF (Financial Action Task Force) is a policy driven international body of member states that sets standards for effective regulations to combat money laundering, terrorist financing, and other threats to the international financial system. (FATF, n.d.). Countries who fail to follow FATF guidance may be designated as non-compliant, putting the country and transactions with that country under enhanced scrutiny by member states and international financial institutions. (FATF, n.d.). In February 2019, FATF added notes regarding virtual assets (cryptocurrency) for their standards to be published in June 2019. These notes include recommendations that countries count virtual assets as property, require virtual asset providers to be licensed or registered, require exchanges to have effective transaction monitoring systems, and have the ability to administer criminal, civil, or administrative punishments if providers fail to comply. (FATF, 2019).

Conclusion

Economic sanctions have been an important tool used by the United States, other countries, and governmental bodies for decades in order to combat oppressive regimes. Countries such as North Korea that have traditionally been impacted by economic sanctions seek other means of trade because of the historical dominance of the U.S. dollar. The emerging market of cryptocurrencies and the intensifying of sanctions against North Korea created a perfect timing of events for the nation to seek alternative sources of financing through digital currency. Although it is unknown if they stole hundreds of millions of dollars, any amount is worrisome.

When the stolen cryptocurrencies can be slowly traded and laundered into legit fiat currency with allies or unwitting participants, that currency could then be used to aid their weapons programs. Currently, cryptocurrency can be traded with criminal organizations, terrorist groups, or other nation states without the interference of banks, regulators, or sanctions through unregulated exchanges.

With the rapid arrival of new technologies such as decentralized cryptocurrencies, countries must react quickly to determine how to properly address the regulation. The recent addition of cryptocurrency addresses to the OFAC list will put more responsibility on exchanges who use the U.S. dollar, or are covered by U.S. jurisdiction, to proactively manage their sanctions screening compliance. These additions will also put pressure on other countries and governmental bodies such as the United Nations to include wallet addresses on their published sanctions lists. The current regulatory environment varies so widely throughout the world on cryptocurrencies that it is impossible for allied countries to say they have a unified approach to preventing the illegal use of cryptocurrencies. Sanctioned countries have always, and will continue to, attempt to evade regulatory oversight of the U.S. through any means.

The previously mentioned Fifth EU AML Directive provides a framework for other countries to follow, but does miss the mark for lack of oversight of cryptocurrency-only exchanges. The June 2019 FATF publication will include updated recommendations for regulating cryptocurrency. These recommendations published by the FATF may take a few years to be fully implemented by member countries. This is because each country must pass their own laws which can take a significant amount of time. After laws are passed and put in place, industry members and companies can have grace periods to comply. The upcoming legislation and recommendations will only be successful if the FATF and member countries make regulating cryptocurrency more of a priority. Due to unregulated cryptocurrency exchanges in foreign countries, sanctioned individuals and countries can partially participate in the global economic system. It is imperative that the United States work with allied countries and governmental associations to create a more unified global regulatory approach to the rapidly evolving world of the cryptocurrency economy.

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