2019 ICM
Problem F: Universal, Decentralized, Digital Currency: Is it possible?

Digital currency can be used like traditional currencies to buy and sell goods, except that it is digital and has no physical representation. Digital currency enables its users to make transactions instantaneously and without any concern for national borders. *Cryptocurrency* is a subset of digital currency with unique features of privacy, decentralization, security and encryption. Cryptocurrencies have exploded in popularity in various parts of the world; moving from an *underground cult* interest to a globally accepted phenomenon. Bitcoin and Ethereum, both cryptocurrencies, have grown in value, while investors are projecting rapid growth for other cryptocurrencies such as Dogecoin or Ripple. In addition to digital and cryptocurrencies, there are also new digital methods for financial transactions that enable users to instantaneously exchange money with nothing more than an email address or a thumbprint. Peer-to-peer payment systems offered by companies like PayPal, Stripe, Venmo, Zelle, Apple Pay, Square Cash, and Google Pay offer virtual movement of money across the globe in seconds without ever having to verify the transaction through a bank or currency exchange. Digital transactions outpace cash and check transactions because they are not delayed by banking policies, national borders, citizenship, debts, or other social-economic factors. These new currency systems decentralize financial transactions, leaving many to consider a world where traditional banking may become obsolete.

Concerns about security of cryptocurrencies worry both citizens and economic analysts. These concerns have constrained its growth in some communities. On the other hand, much of the popularity of cryptocurrency is due to its departure from traditional overly-restrictive security and debt measures that rely on oversight by large banks and governments. These oversight institutions are often expensive, deeply bureaucratic, and sometimes corrupt. Some experts believe that a universal, decentralized, digital currency with internal security like *blockchain* can make markets more efficient by eliminating barriers to the flow of money. This is particularly important in countries where the majority of citizens do not have bank accounts and are unable to invest in regional or global financial markets. Some governments, however, view the lack of regulation around these currencies and their *anonymity* as too risky because of how easily they can be used in *illicit* transactions, such as tax sheltering or purchasing illegal merchandise. Others feel that a secure digital currency offers a more convenient and safer form of financial exchange. For instance, a universally accepted currency would enable truly global financial markets and would protect individual assets against regional inflation *fluctuations* and artificial manipulation of currency by regional governments. If alternative digital systems become more established, there will be many questions about how digital currency will affect current banking systems and *nation-based currencies*.

Your policy modeling team has been employed by the International Currency Marketing (ICM) Alliance to help them identify the viability and effects of a global decentralized digital financial market. ICM Alliance has asked you to construct a model that adequately represents this type of financial system, being sure to identify key factors that would limit or facilitate its growth, access, security, and stability at both the individual, national, and global levels. This requires you to consider the different needs of countries and their willingness to work with this new financial marketplace and modify their current banking and *monetary* models. It may or may not require them to abandon their own currency, so that adds a level of complexity to the market model. You are not to choose an existing digital currency, but discuss the strategies for adoption, and problems in implementation of, a general digital currency. You should also include the mechanisms for oversight of such a global digital currency. The ICM Alliance has asked you to extend your analysis to consider the long-term effects of such a system on the current banking industry; the local, regional, and world economy; and international relations between countries.

ICM requests a report of your modeling and analysis, and a separate one-page policy recommendation for national leaders, who hold mixed opinions about this effort. The policy recommendation should offer rationale for the parameters and dynamics included in your model and reflect the insights you gained from your modeling. Your polices might address, for example, growth, reach, access, security, and stability of the system.

Your team's submission should consist of:

- One-page Summary Sheet,
- One-page policy recommendation for national leaders,
- Your solution of no more than 20 pages, for a maximum of 22 pages with your summary and policy recommendation.
- Judges expect a complete list of references with in-text citations, but may not consider appendices in the judging process.
- Note: Reference list and any appendices do not count toward the 22-page limit and should appear after your completed solution.

References:

Paul Krugman, "O Canada: A neglected nation gets its Nobel". *Slate*, Oct 19, 1999. https://slate.com/business/1999/10/o-canada.html

Stephanie Lo and J. Christina Wang, "Bitcoin as Money?" *Current Policy Perspectives*, Federal Reserve Bank of Boston, 2014. https://www.bostonfed.org/publications/current-policy-perspectives/2014/bitcoin-as-money.aspx or https://www.bostonfed.org/-/media/Documents/Workingpapers/PDF/cpp1404.pdf

Glossary:

Anonymity – the state of being unnamed or unidentified; the state of being anonymous.

Blockchain – the record keeping technology that can document transactions between two parties in a verifiable and permanent way; a digital database containing information that can be shared and simultaneously used across a large publicly accessible and decentralized network.

Cryptocurrency – a digital or virtual currency that uses cryptography (protecting information through the use of codes) for security.

Digital Currency – [digital money, electronic money, electronic currency] is a type of currency in digital (electronic) versus physical (coins, paper) form.

Illicit – illegal or dishonest.

Fluctuations – variations or oscillations; rises and falls. .

Monetary – relating to money or finances, or to the mechanisms by which money is supplied to and circulates in the economy.

Nation-based currencies – [national currencies] a system of money issued by a central bank and in common use within a particular nation or group of nations; examples are United States dollar (USD), Chinese renminbi (RMB or CNY), European Euro (EUR), British pound sterling (GBP), and Japanese yen (JPY).

Underground cult – hidden or mysterious group of people sharing an excessive devotion toward a particular person, belief, or thing.