

# CRYPTOCURRENCIES AND THE FUTURE OF MONEY

Money and Trust  
in the USA

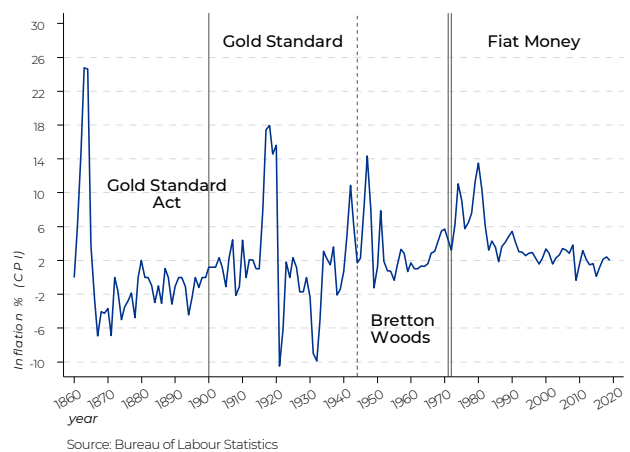
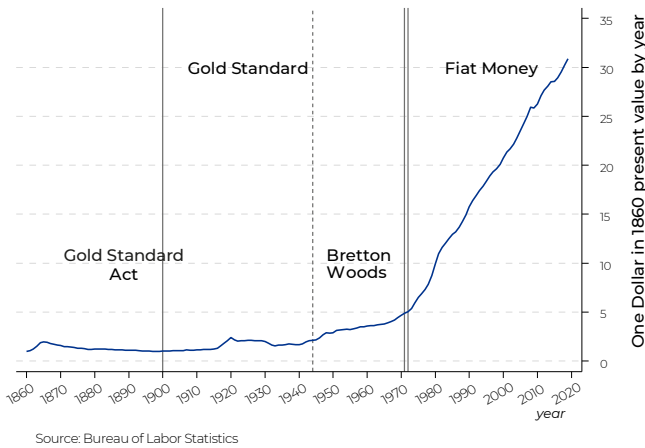
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## I. BACKGROUND

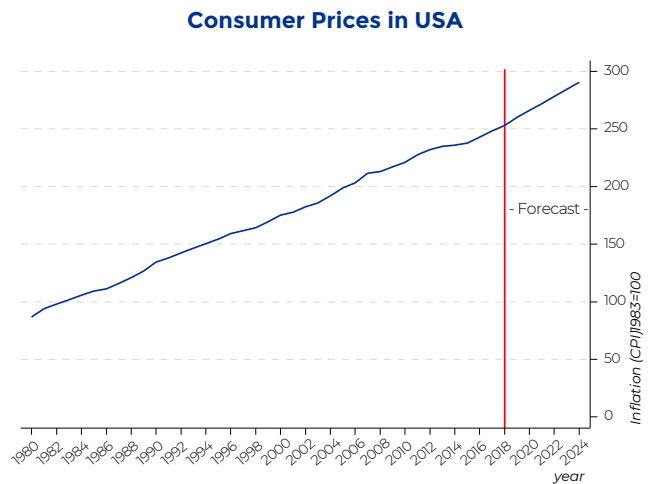
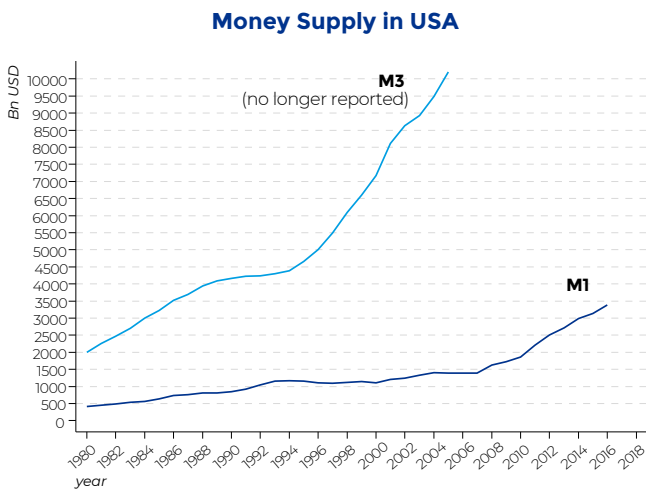
The US Dollar has a unique place in the world. It is a reserve currency of most central banks, the currency of settlement for a large number of contracts, and widely trusted by the international community. The established independence of a highly professionalized Federal Reserve has allowed for the US Dollar to maintain this unique dominance through responsible management of money supply.

### Inflation and Consumer Prices in the United States (1860 – 2019)



**DATA SOURCE:** IMF International Finance Statistics (left) and IMF World Economic Outlook (right)

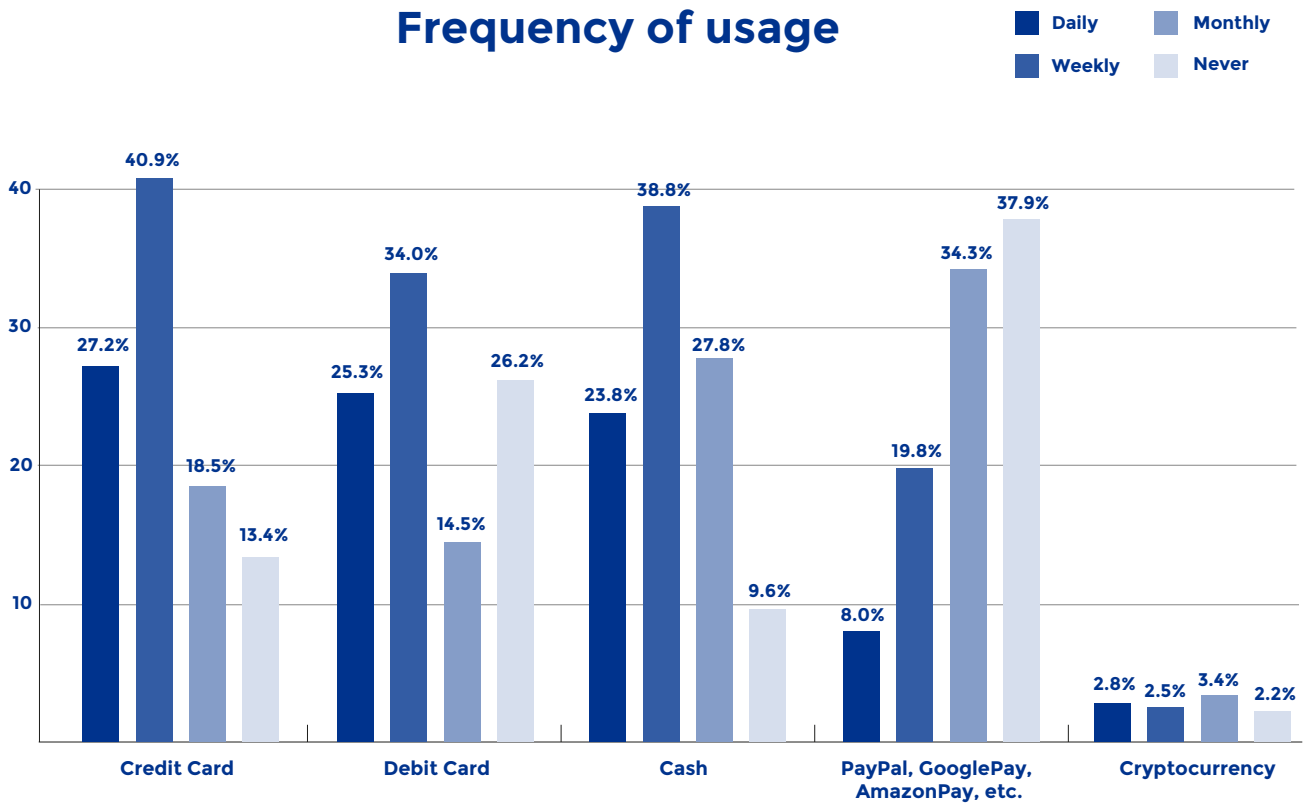
### Money Supply and Consumer Prices in the United States (1980 – 2019)



**DATA SOURCE:** IMF International Finance Statistics (left) and IMF World Economic Outlook (right)

## II. CURRENT USAGE OF MONEY IN AMERICA

Looking at current usage of different types of money in the US, the majority of Americans make use of credit cards (68%), debit cards (59%) and cash (63%) on a daily or weekly basis. The newly emerging online payment companies have around 28% usage on a daily or weekly basis.



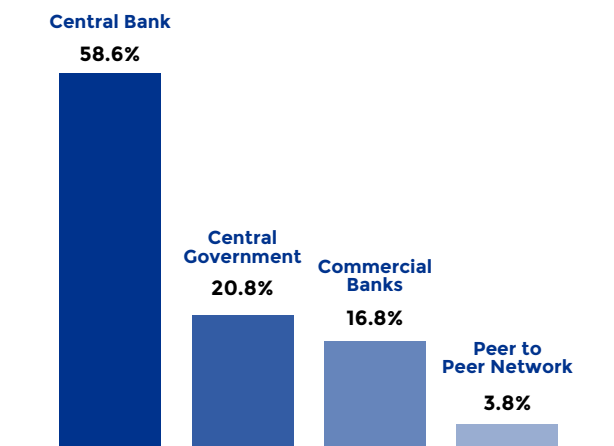
SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

By far, the least used form of money in our survey is cryptocurrency with only around 5% of respondents using these on a daily or weekly basis. Interestingly, this is the type of money that varies significantly across age and income groups.

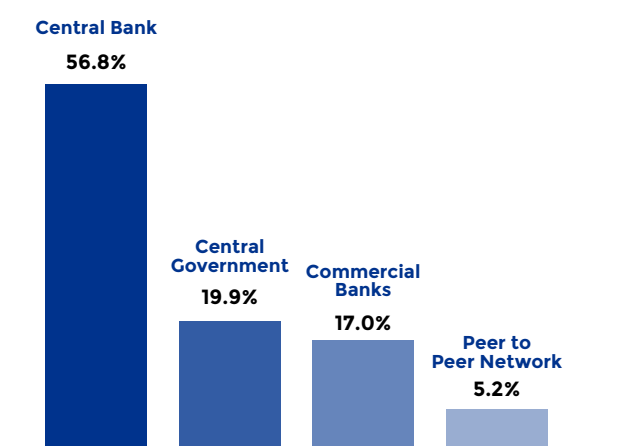
### III. KNOWLEDGE OF AND TRUST IN MONEY IN AMERICA

In 2017, a WalletHub survey found that Americans do not have a great deal of understanding of what the Federal Reserve actually does in terms of its role and responsibilities. For example, 16 percent of Americans thought the Federal Reserve was in charge of consumer credit scores. Despite this lack of general knowledge, roughly one in seven respondents thought the Federal Reserve ought to be abolished<sup>1</sup>. To get an understanding of how well Americans understand some basics regarding the issuance and management of money, we asked respondents who they thought created money and how they thought 'should' create money. The results suggest that the majority of Americans (59%) correctly believe that the central bank creates and manages money. The other creator of money, commercial banks, were unsurprisingly less well known with only around 17% of Americans believing that they create money. Surprisingly, more Americans believed that the central government created and managed money (21%). Comparing the left and right hand side, it also appears that American are pretty content with who they currently believe creates and manages money (no significant changes are desired).

**Who creates & manages money in the US?**



**Who should create & manages money in the US?**



**SOURCE:** IE Survey 'Cryptocurrencies and The Future of Money'

In the presence of many new forms of money in the 21<sup>st</sup> century, the types of institutions who create money has increased dramatically over the past five years. For example, in 2019 there are over 2,000 different cryptocurrencies which are not issued by government or commercial banks. To get a clearer idea of how Americans trust different types of institutions to create and manage money in the US, we asked respondents to rank each of five types of money creator from most preferred to least preferred. The results are similar to those above with a few key differences. In terms of similarities, Americans trust the central bank with around 45% ranking it as their first choice. A key difference is the levels of trust when comparing the central government with commercial banks. While central government had very little support as a first choice (12%), commercial banks fared much better with 31% of respondents ranking them as a first choice to create and manage money.

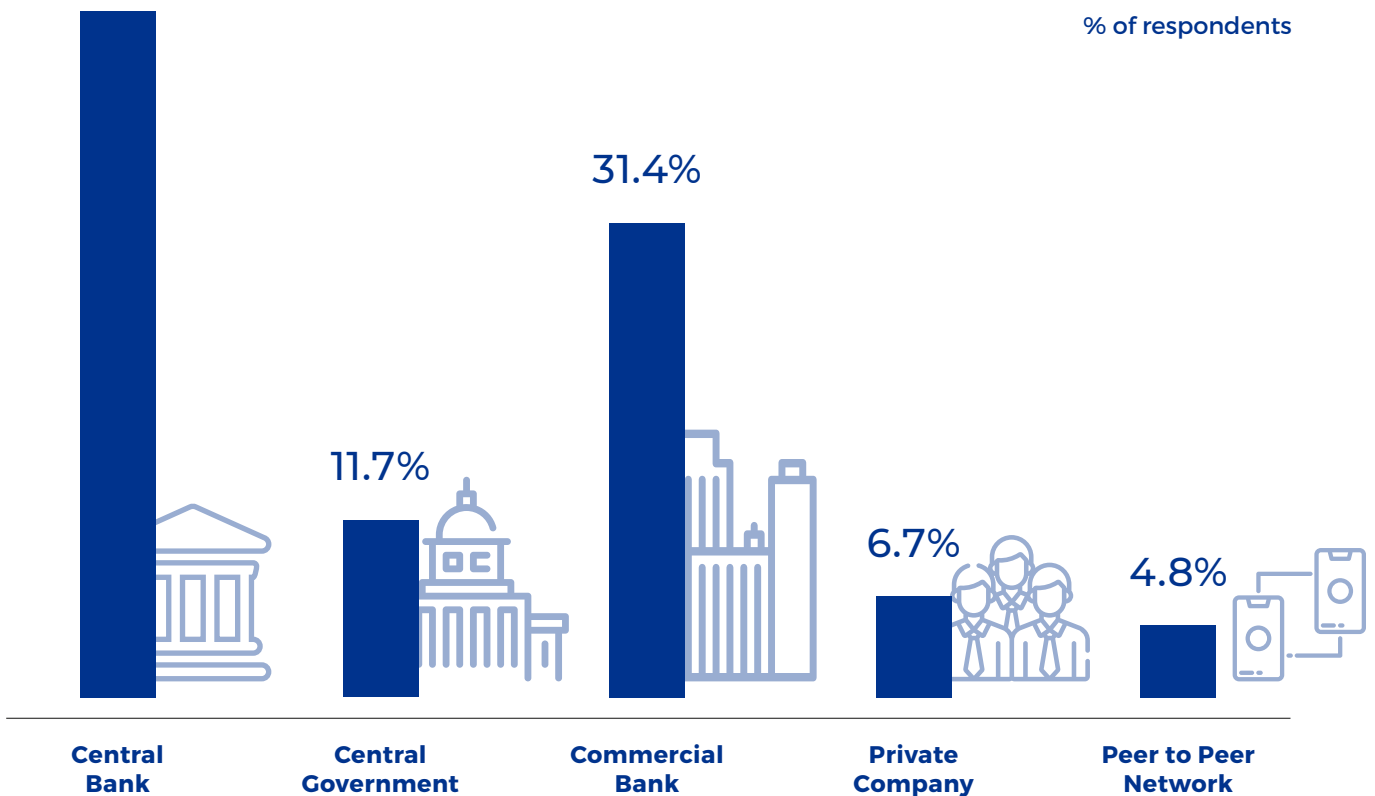
Comparing these levels of trust with nontraditional source of money creation and management shows significant differences with only about 5% of Americans ranking peer-to-peer networks as their first choice and 7% ranking private (nonbank) companies at their first choice. These results paint a fairly pessimistic prognosis for cryptocurrencies becoming a widely used type of money in the near future.

<sup>1</sup> See <https://www.nbcnews.com/business/economy/nobody-really-knows-what-fed-does-they-think-it-s-n786091>

45.4%

### Who ranked institution as first choice

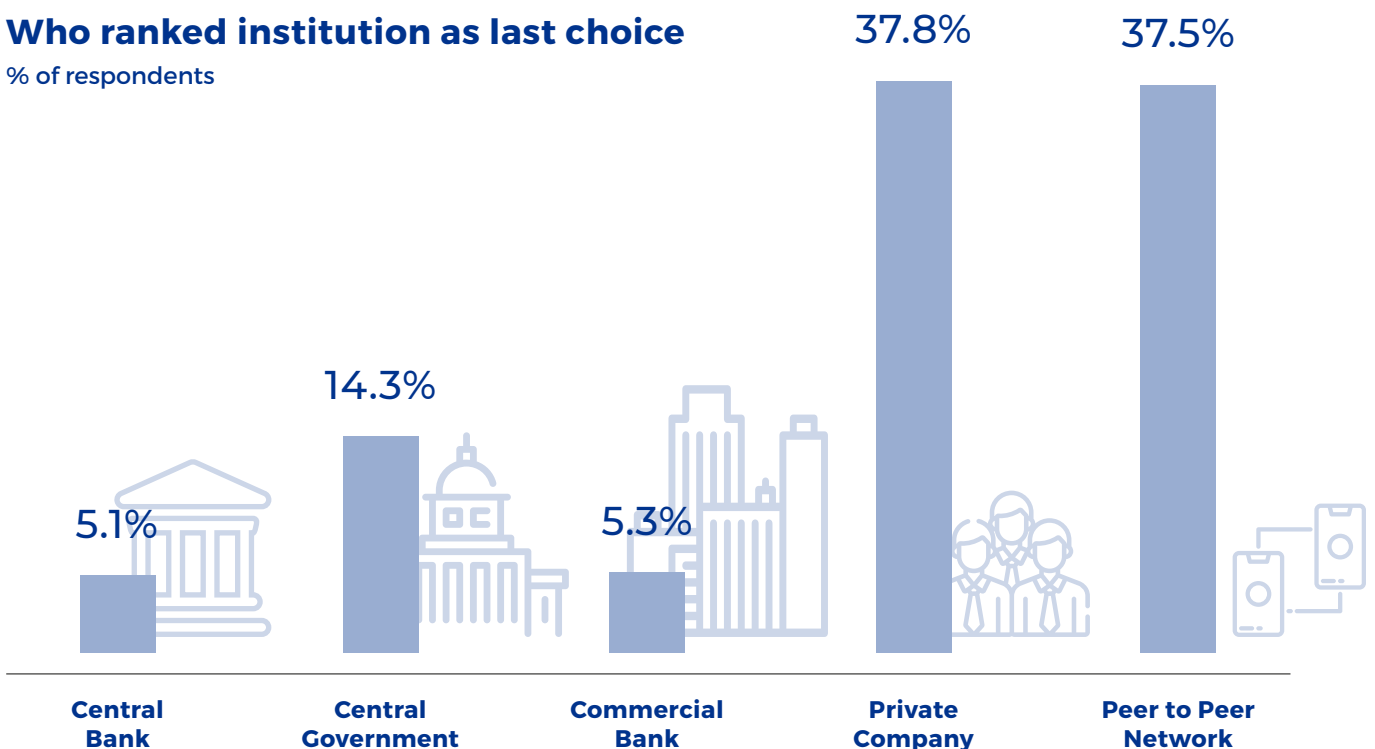
% of respondents



The relative low levels of trust in government (as compared with the central bank and commercial banks) could be partly related to the general public perception of their handling of the recent financial crisis. While the crisis was certainly not caused by the government, a large proportion of the public believes that the regulatory response has been insufficient for preventing another financial crisis in the future.

### Who ranked institution as last choice

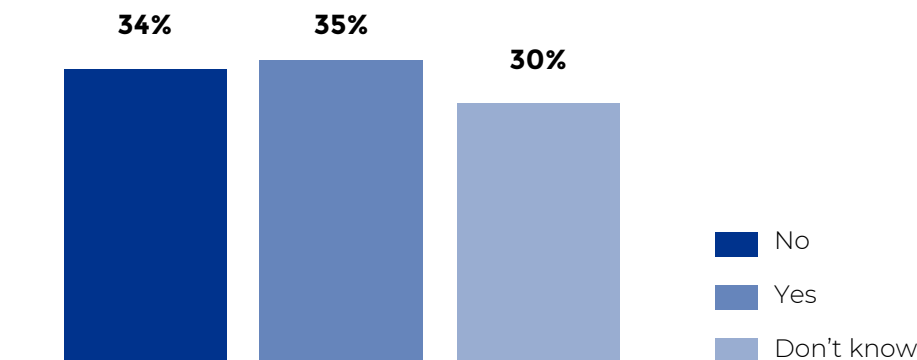
% of respondents



SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

We can see this from the relatively even proportion of respondents believing that government has taken meaningful steps in regulating the banking sector to prevent a future financial crisis. Specifically, 34% of respondents believed that government has not done enough, 35% believed that government has done enough. The remaining 30% of respondents were uncertain about whether has taken meaningful steps.

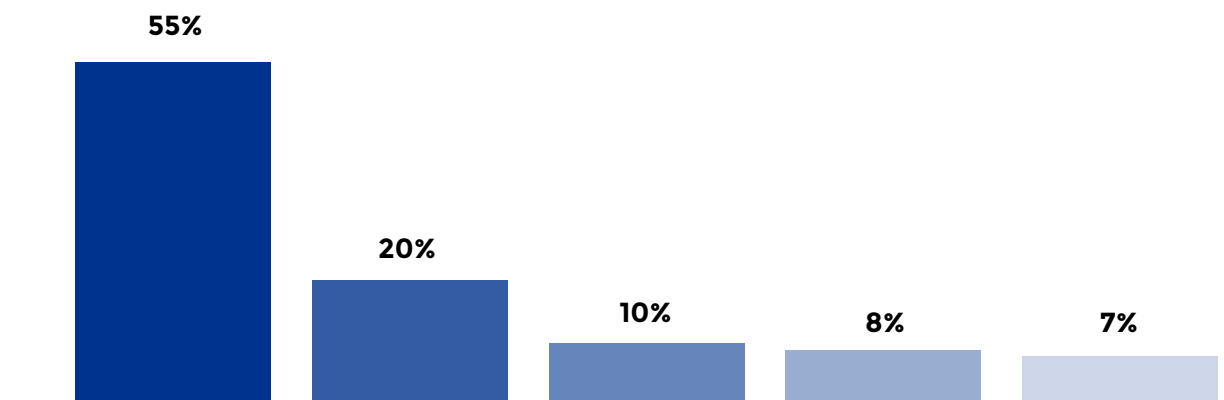
### Government has taken meaningful steps by regulating the banking sector since 2008 to prevent another financial crisis



SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

For respondents who felt that government has not has taken meaningful steps in regulating the banking sector to prevent a future financial crisis, by far, the most common response was that (55%) believed that 'it is an important issue for voters but there is too much influence (lobbying, etc.) on government for meaningful changes to happen'. The second most chosen option was a belief that government does not have the expertise to make the right reforms (20%). Both of these suggest a lack of trust in the decision makers in government which helps to explain the surprisingly low levels of ranking in the creation and management of money.

### Why no meaningful steps have been taken



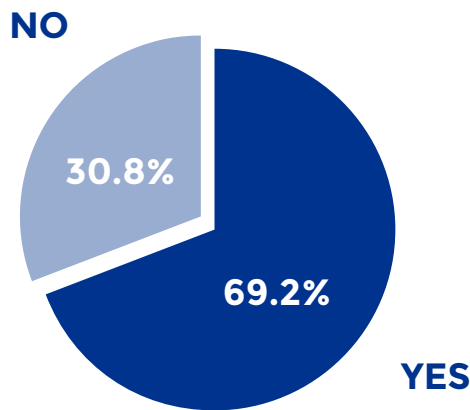
- It is an important issue for voters but there is too much influence on government (via lobbying, etc.) for any meaningful changes to happen
- Government does not have enough expertise to make the right reforms
- It's not an important issue for voters
- No reform is needed, as financial crises are inevitable regardless of government policy
- Others

SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

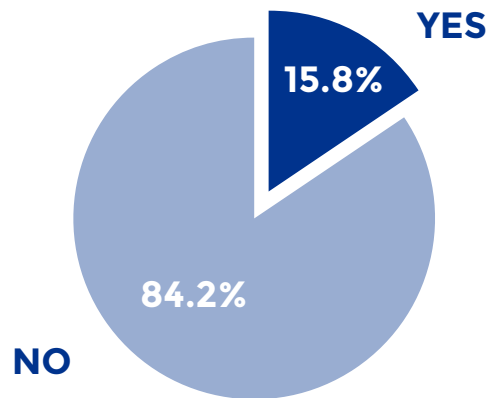
## IV. ATTITUDES TOWARD CRYPTOCURRENCIES IN AMERICA

Moving to cryptocurrencies, a 2015 PWC survey found that only 6% of Americans were very familiar with cryptocurrencies (83% were slightly or not at all familiar).<sup>2</sup> In June 2018, ING found that 57% of American residents had heard of cryptocurrency with around 8% claiming to own some form of cryptocurrency.<sup>3</sup> Comparing this with our survey results from August of 2019, more Americans (almost 70%) have heard of cryptocurrencies and almost double (16%) the amount from the 2018 ING survey now own cryptocurrency. This suggests a growing interest among American in purchasing cryptocurrency since 2018 which varies significantly across age and income.

Have you heard of cryptocurrency?



Do you own any cryptocurrency?



SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

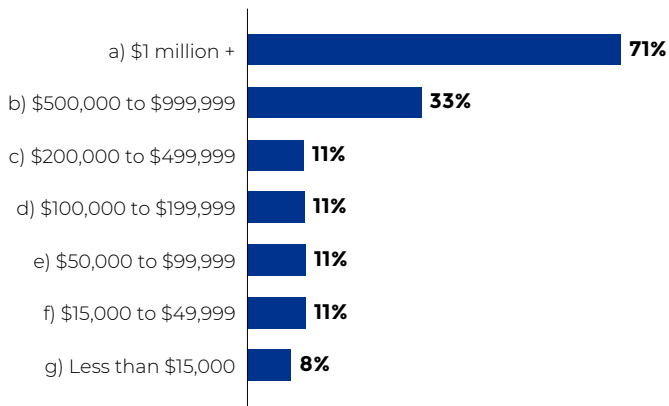
Breaking ownership down by income, levels are very high amongst the very wealthy with over 70% of respondents (income over 1 million US Dollars) owning some cryptocurrency, and 33% with of respondents with income between 500,000 and 999,999 US Dollars. For all other income bands, ownership levels are much smaller averaging 11% (with the exception of those with income under 15,000 US Dollars). The variation over age is fairly intuitive with the majority of owner being in the 18-44 age group and very little ownership (around 3%) amongst those 55 and up. The result that cryptocurrencies are largely owned by young and wealthy Americans, suggesting that these are likely to be investments rather than for day to day transactions. There does not appear to be any systematic differences across education, but there is a large difference in ownership between men and women. Men are more than twice as likely to own cryptocurrencies.

<sup>2</sup> See <https://www.pwc.com/us/en/industries/financial-services/library/cryptocurrency-evolution.html>

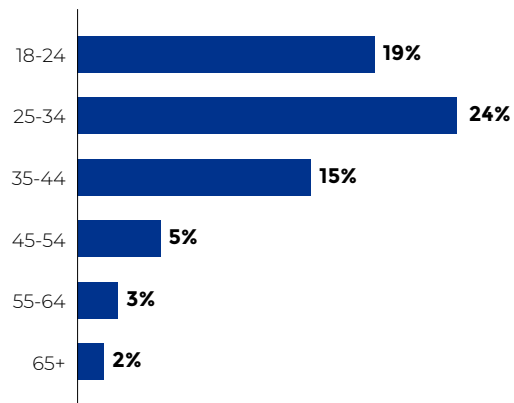
<sup>3</sup> See [https://think.ing.com/uploads/reports/ING\\_International\\_Survey\\_Mobile\\_Banking\\_2018.pdf](https://think.ing.com/uploads/reports/ING_International_Survey_Mobile_Banking_2018.pdf)



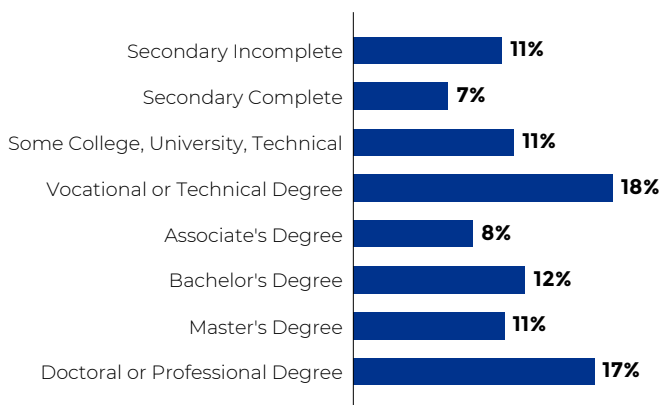
### Ownership of cryptocurrency by income



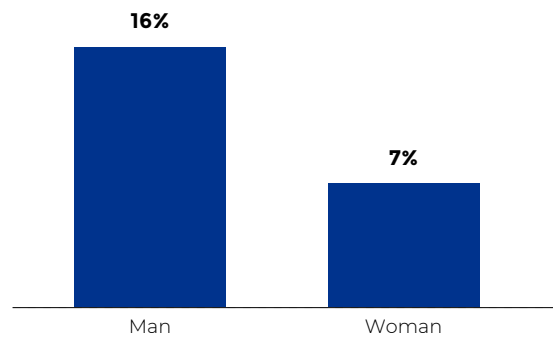
### Ownership of cryptocurrency by age



### Ownership of cryptocurrency by education



### Ownership of cryptocurrency by gender

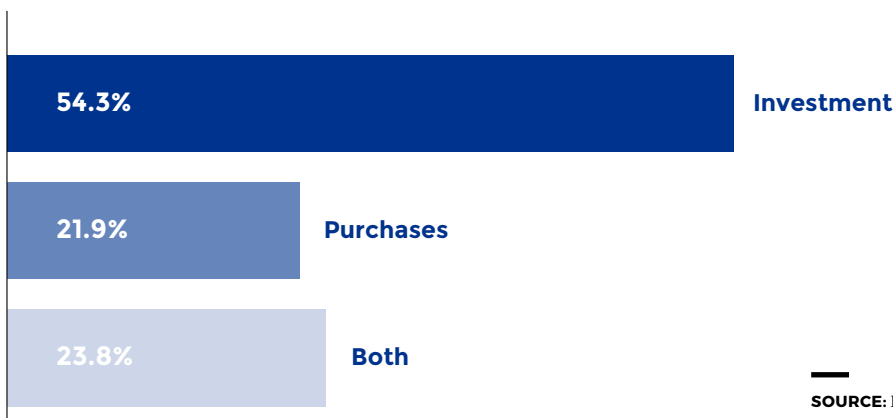


SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

To validate this, the survey asked those Americans who owned cryptocurrency whether it was as an investment or to make purchases.

Unsurprisingly, the majority (54%) of cryptocurrency owners hold them specifically as an investment with only 22% using cryptocurrency specifically to make purchases. In this sense, cryptocurrency is not a currency at all in the US, but instead a financial investment. Tying this in with the results above, the small niche of cryptocurrency owners tend to be young and wealthy and are in the cryptocurrency market to make a return on the investment rather than use it as a type of money.

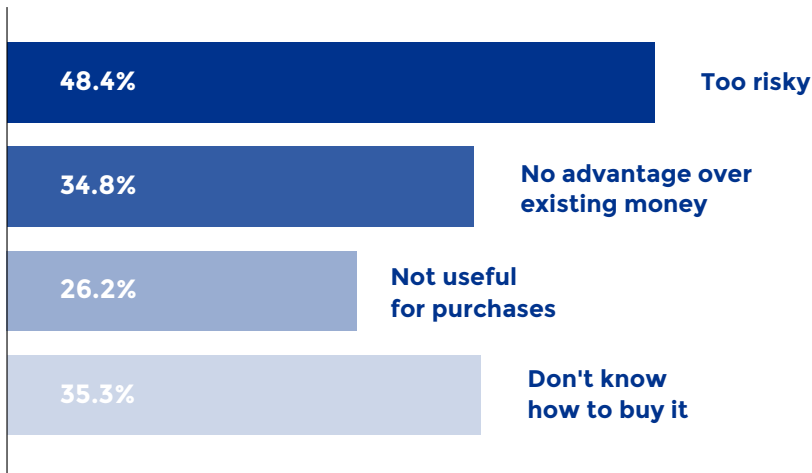
### Why do you own cryptocurrency?



SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

For those respondents who do not own cryptocurrencies, the most common reason (48%) was that believe that it is too risky. Surprisingly, the second most common response (35%) was that they didn't know how to buy it suggesting that the cryptocurrency market could grow significantly by educating the general public on how it can be purchased.

### Why do you not own cryptocurrency?



**SOURCE:** IE Survey 'Cryptocurrencies and The Future of Money'

Putting these findings together, an increasing number of Americans are becoming aware of cryptocurrencies but ownership is still very limited. The majority of current owners are young wealthy males who hold these as an investment. There is some potential for cryptocurrencies to expand their ownership but this will require the building of trust with the public through better education and communication.

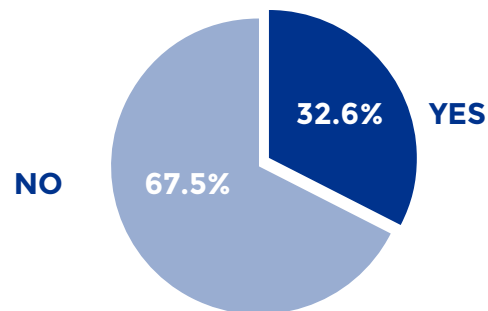
## V. THE FUTURE OF CRYPTOCURRENCY IN AMERICA

As noted above, there are over 2,000 different cryptocurrencies in 2019 which can be bought or sold by Americans on public exchanges. With the surge in these alternative types of ‘money’, there is an important question of whether their ownership can be extended beyond the very small pool of young wealthy Americans and their use can move from an investment to being used in day-to-day transactions (as seen in Section IV). One of the unique features of these altcoins is that the issuer is a private sector firm which is not a commercial bank which, from Section III, was found to have limited trust from the general public. To gauge the American public’s appetite for a well designed and efficient cryptocurrency (i.e. one that is superior to currently existing money) which is issued by a private company, we asked respondents:

**“Suppose that a new cryptocurrency was designed by a private company (or group of companies) that could be used to make all of your day-to-day transactions (it is accepted by all sellers) and has a stable value over time (low inflation/deflation). This currency could also be converted to other currencies at a very small cost. Would you prefer to use this currency over your current method of payment?”**

The results are more optimistic that current usage levels from Section II, possibly due to the fact that currently existing cryptocurrencies are not efficient and do not have stable prices. Around 33% of American expressed a willingness to use a new type of money issued by a nontraditional backer (a private company). Amongst those who said that would support an effective privately created digital currency, there were significant differences across age and income.

**Would you use an effective private currency?**

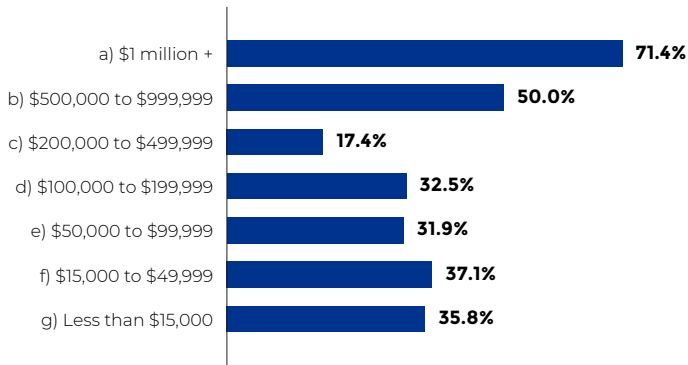


**SOURCE:** IE Survey ‘Cryptocurrencies and The Future of Money’

A willingness to use an effective digital currency follows a similar pattern across income, age and gender (but not education). This is unsurprisingly similar to the patterns we saw with current ownership of cryptocurrencies. Mainly, wealthy individuals tend to support a new effective cryptocurrency more than those who make less than 500,000\$, however, the difference here are smaller than those from current ownership of cryptocurrencies. Young people (those under 45) are significantly more likely to support a new effective cryptocurrency and men a slightly more likely than women.

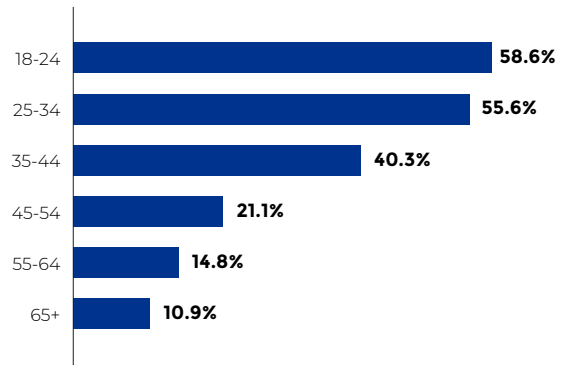
### Would you use an effective private currency?

BY INCOME



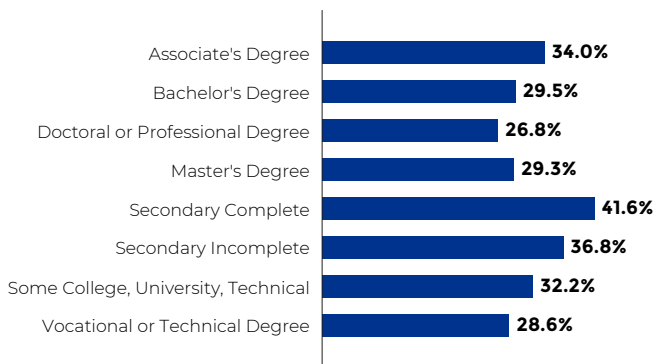
### Would you use an effective private currency?

BY AGE



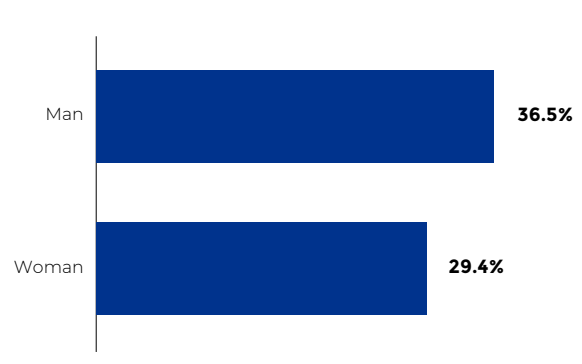
### Would you use an effective private currency?

BY EDUCATION



### Would you use an effective private currency?

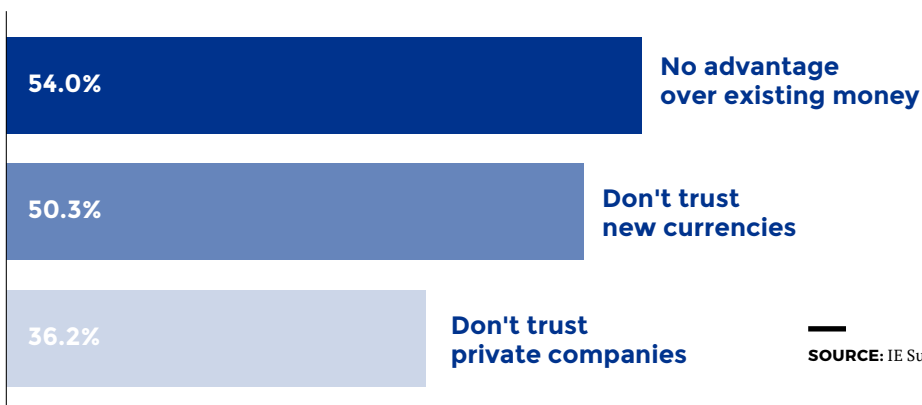
BY GENDER



SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

Amongst the 67% of Americans who would not use a new effective cryptocurrency, the most common reason was that it had no advantage over existing types of money (54%). This was followed closely by a lack of trust in new currencies (50%) and private companies (36%). These results are somewhat optimistic for digital currencies as their advantages have apparently not been well communicated to a significant proportion of the general public.

### Why Not?



SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

With the new high profile announcement by Facebook that they, along with a large pool of high profile partners, would launch the 'Libra' in 2020 came a flood of speculation about its potential for success. Following this announcement, a significant proportion of the general public have expressed pessimistic views of the Libra given the low levels of trust in Facebook in managing valuable information.

For example a June, 2019 Viber survey of 1,000 American residents found that nearly half of respondents in both countries (49%) say they would not trust Facebook at all, and less than 3% and 2% of US and UK respondents, respectively, said they would be willing to try Libra for payments. The results generally find that the American public does not trust Facebook to manage important information relating to their personal finances.

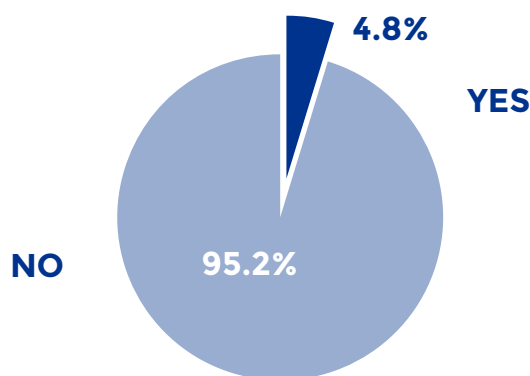
### Would you trust Facebook to keep your information secure when using its new crypto payment service, Libra?



DATA SOURCE: Viber

The results from our survey are equally pessimistic. Around 5% of Americans stated that they would trust Facebook to issue a currency with 95% responding that they would not. There were significant differences across age but only small differences across income.

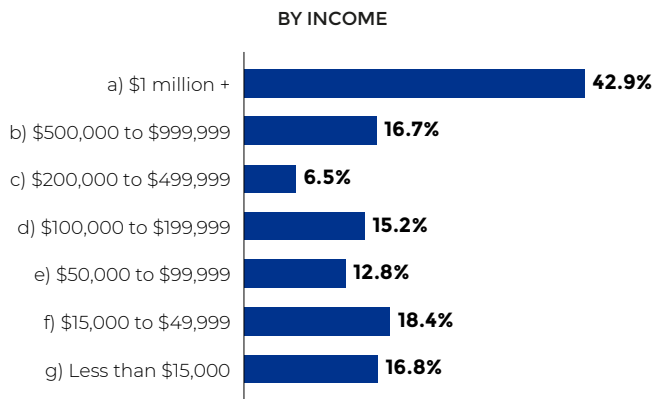
### Trust in Facebook to issue a private currency



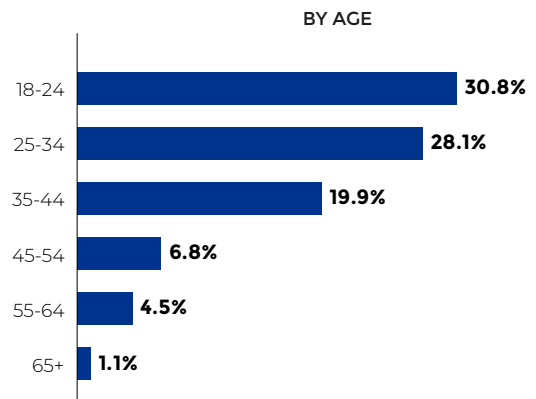
SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

Among the around 5% of American residents who said they would support Facebook’s Libra, these tend to be young males. Interestingly, there does not appear to be any significant variation across income or education with the exception of very wealthy (annual income over 1 million USD) and low education (incomplete secondary) residence.

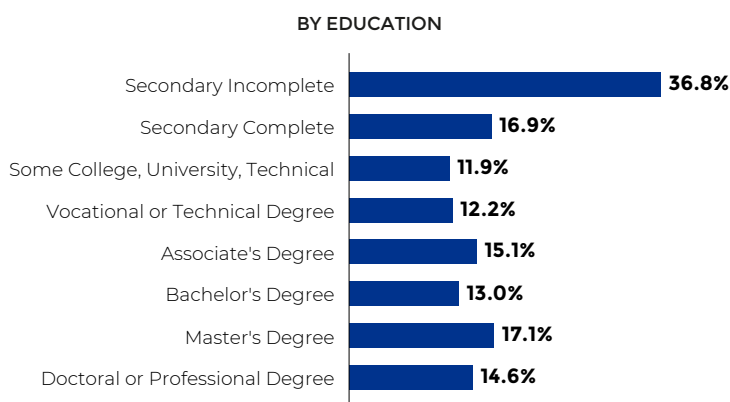
**Trust in Facebook to issue a private currency**



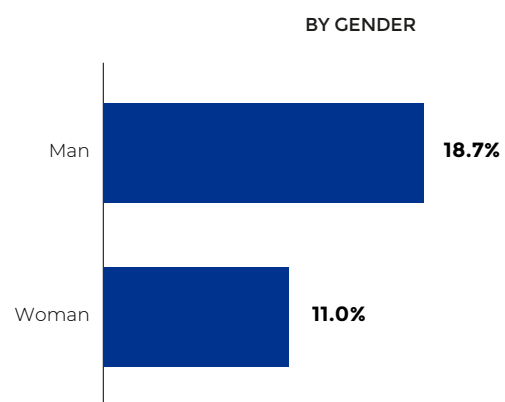
**Trust in Facebook to issue a private currency**



**Trust in Facebook to issue a private currency**



**Trust in Facebook to issue a private currency**



**SOURCE:** IE Survey 'Cryptocurrencies and The Future of Money'

## VI. A CONJOINT ANALYSIS OF PREFERENCES FOR MONEY IN THE USA

While the above discussion is helpful in gaining a deeper understanding of Americans usage, knowledge, trust of money. Understanding exactly what characteristics of money are important to Americans requires a systematic approach. Fortunately, a choice based conjoint analysis is an excellent way to measure the relative ‘utilities’ that Americans gain from different types of money which vary across each attribute. We can look at how each of five main attributes are valued against each other. To do this, from the sample of 1,000 adult US residents, we provided each respondent with ten frames, each of which provided the respondent with a choice between three hypothetical currencies with varying attributes. For the purpose of this exercise, we characterized ‘money’ as having five underlying attributes:

- 1. Issuer/backer** refers to who issues and/or backs that currency. This could be a central bank, a commercial bank (private sector company), or a peer-to-peer nonprofit like Bitcoin (private sector peer to peer).
- 2. Acceptability** refers to where are able you use the currency. Is your currency accepted by all sellers of goods/services or only some sellers of goods/services (within the area in which you buy/sell goods and services)?
- 3. Transaction costs** are there costs involved in making the transaction (these are commonly known as ‘fees’, ‘premiums’ or ‘spreads’).
- 4. Price Stability** refers to the expected change in the amount of goods and/or services you can buy over the course of a month with the same amount of currency (i.e. x\$ in October will be worth y\$ in November)
- 5. Digital/physical.** All currency that is stored outside of your personal physical possession can be considered as digital.

Each of these five attributes was assigned between two and four options shown below.

ATTRIBUTE	ATTRIBUTE CHARACTERISTIC
ISSUER/BACKER	<ul style="list-style-type: none"> <li>• Central bank</li> <li>• Private sector commercial bank</li> <li>• Private Sector peer-to-peer network</li> </ul>
ACCEPTABILITY	<ul style="list-style-type: none"> <li>• All sellers accept the currency</li> <li>• 80% of sellers accept the currency</li> <li>• 40% of sellers accept the currency</li> </ul>
TRANSACTION COST	<ul style="list-style-type: none"> <li>• Zero</li> <li>• 0.1-1% of the transaction value</li> <li>• 1-10% of the transaction value</li> </ul>
PRICE STABILITY	<ul style="list-style-type: none"> <li>• Max monthly inflation/deflation of 0 % (100 = 100)</li> <li>• Max monthly inflation/deflation of 0-1% (100 = 99, or 100 = 101)</li> <li>• Max monthly inflation/deflation of 1-10% (100 = 90, or 100 = 110)</li> <li>• Max monthly inflation/deflation of 10-50% (100 = 50 or 100 = 150)</li> </ul>
DIGITAL/PHYSICAL	<ul style="list-style-type: none"> <li>• Digital</li> <li>• Physical</li> </ul>

To give an idea of what each of these frames would look like an example is provided below where respondents would be asked to choose their preferred one of the three hypothetical currencies with predefined characteristics across each of the five attributes.

	CURRENCY 1	CURRENCY 2	CURRENCY 3
MONEY ISSUER	Central Bank	Private sector corporation	Private sector peer-to-peer
LEVEL OF ACCEPTABILITY	80% of sellers accept the currency	All sellers accept the currency	40% of sellers accept the currency
COST OF TRANSACTION	Fee of between 0.1 and 1% of the transaction value	Fee of between 1 and 10% of the transaction value	Zero
PRICE STABILITY	100 (local currency) could be worth between 99 and 101 next month	100 (local currency) will be worth 100 next month	100 (local currency) could be worth between 90 and 110 next month
DIGITAL OR PHYSICAL	Digital	Digital	Physical

This gives us 30,000 (1,000 respondents with ten frames of three options) observations reflecting the preferences of US residents for money across our five attributes. The easiest way to interpret the results in a meaningful way is by examining the average marginal effects of each attribute choice. Effectively, these can be viewed as premiums/discounts place on specific characteristics of money. For example, we can see from the figure below that Americans place a significant premium on central bank issued money and are very averse to low acceptability rates. The advantage of using a conjoint based approach is that we can directly compare different characteristics with each other. Looking at the figure below Americans have a strong aversion to currencies which have limited acceptability, especially when it is below 50%. There is also a fairly strong aversion to transaction costs (above 0%) and high levels of inflation (there does seem to be tolerance of moderate levels of inflation). Lastly, when comparing digital with physical money, Americans still appear to have a slight preference for physical cash.



SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'



Thinking about these results in the context of current types of money, cash, credit cards, and debit cards in America all have very high levels of acceptability and relatively low transaction costs. In the introduction to this report, we also suggested that the US Dollar has become a highly regarded international reserve currency due to its stable inflation and reputation as trustworthy creators and managers of money. This means that we can expect low levels of inflation with cash, credit cards and debit cards. Overall, these three highly used types of money score quite highly in the context of the conjoint analysis. Comparing this with existing cryptocurrencies, all have very low levels of acceptability and large price fluctuations which are two of the least desired characteristics of money. As noted above, there is also a trust premium enjoyed by the Federal Reserve relative to both commercial banks, who have a significant premium over the least preferred issuer (peer-to-peer).

All of this suggests that cryptocurrencies, especially those which are privately issued, have a long way to go before they might be able to compete with or overtake traditional forms of money like cash, credit cards and debt cards backed by central and commercial banks in the US.



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## TEAM OF RESEARCHERS

### DIRECTOR:

Dr. Mike Seiferling, UCL

### RESEARCHERS:

- Mr. Thamin Ahmed, UCL Centre for Blockchain Technologies
- Dr. Abeer Yehia ElBahrawy, City, University of London
- Mr. Keith Chan, University of Cambridge
- Mr. Tales Padila, Oxford University

### RECOMMENDED CITATION:

*CGC, Cryptocurrencies and the Future of Money.*  
Madrid: Center for the Governance of Change,  
IE University, 2019.

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