CENTER FOR THE GOVERNANCE OF CHANGE

CRYPTOCURRENCIES AND THE FUTURE OF MONEY

Money and Trust in the UK

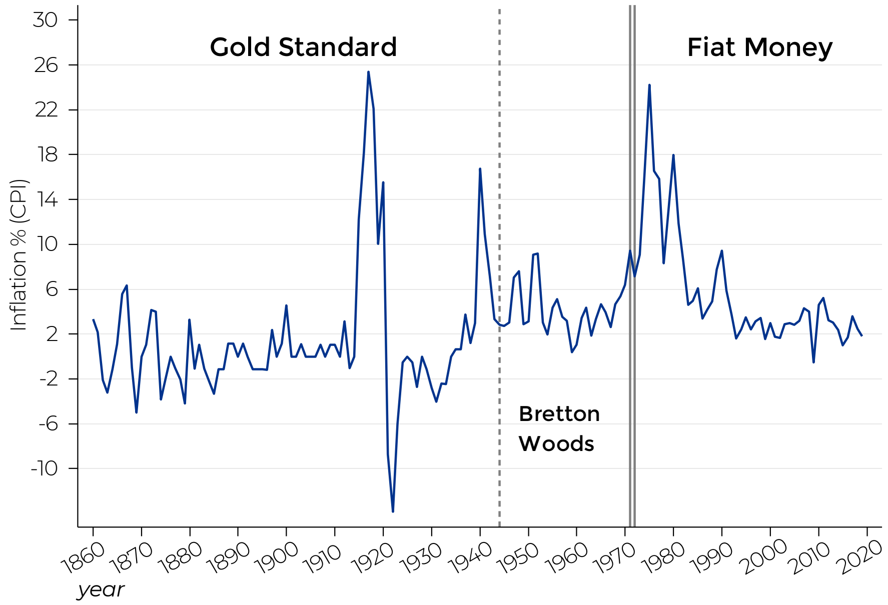
December 2019

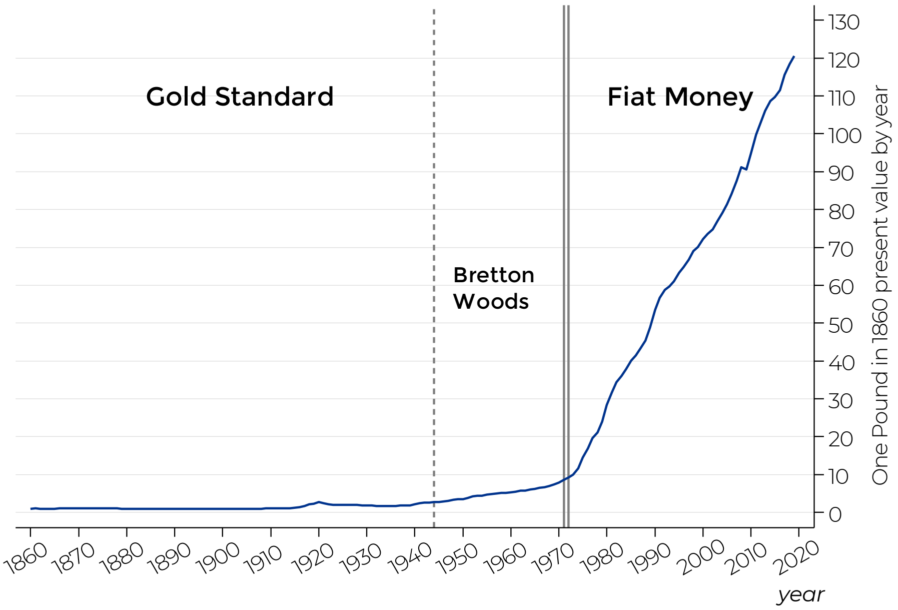
Content

I. BACKGROUND

Much like the US Dollar, the British Pound has a unique place in the world. The is largely due to a combination of a long lived and "robust institutional framework" and the sterling's monopoly as legal tender in the UK which "sets a very high bar for competing forms of money to dislodge sterling." (Mark Carney, Governor of the Bank of England)[1]. We can see evidence of this responsibly managed money growth in the fiat currency era and stable inflation in the figures below.

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





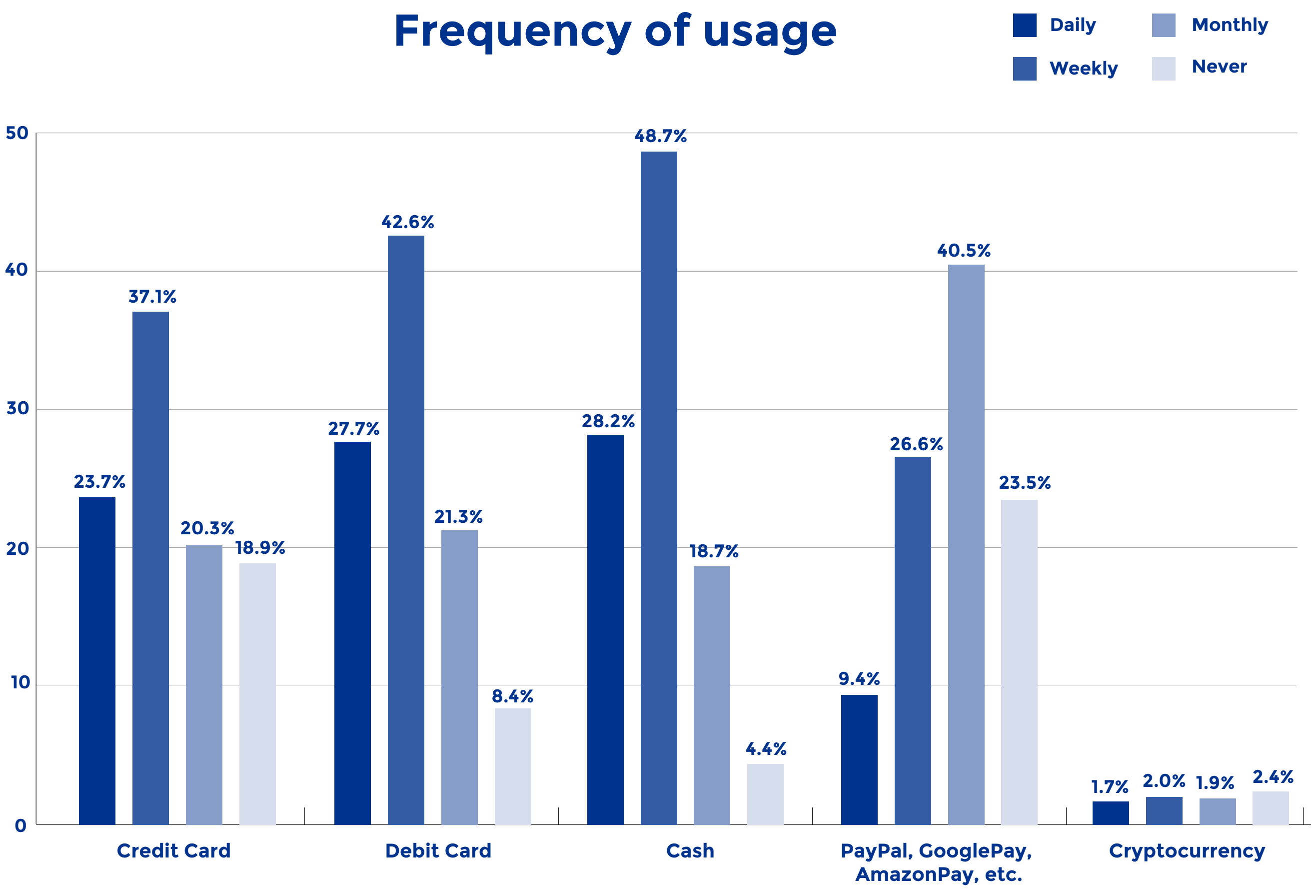
Source: Office for National Statistics

The Bank of England has also been a leader when it comes to research into and communication of cryptocurrencies and central bank digital curerncies, including Barrdear and Kumhof, 2016; Ali, Barrdear, Clews and Southgate 2014; McLeay, Radia and Thomas 2014; and, Kumhof and Noone 2018 (among others). Most of this research has dealt with technical issues surrounding the adoption of digital currencies with less work being done on the general public's attitudes towards and understanding of them.

1 Speech given by Mark Carney, Governor of the Bank of England To the inaugural Scottish Economics Conference, Edinburgh University 2 March 2018)

II. CURRENT USAGE OF MONEY IN THE UK

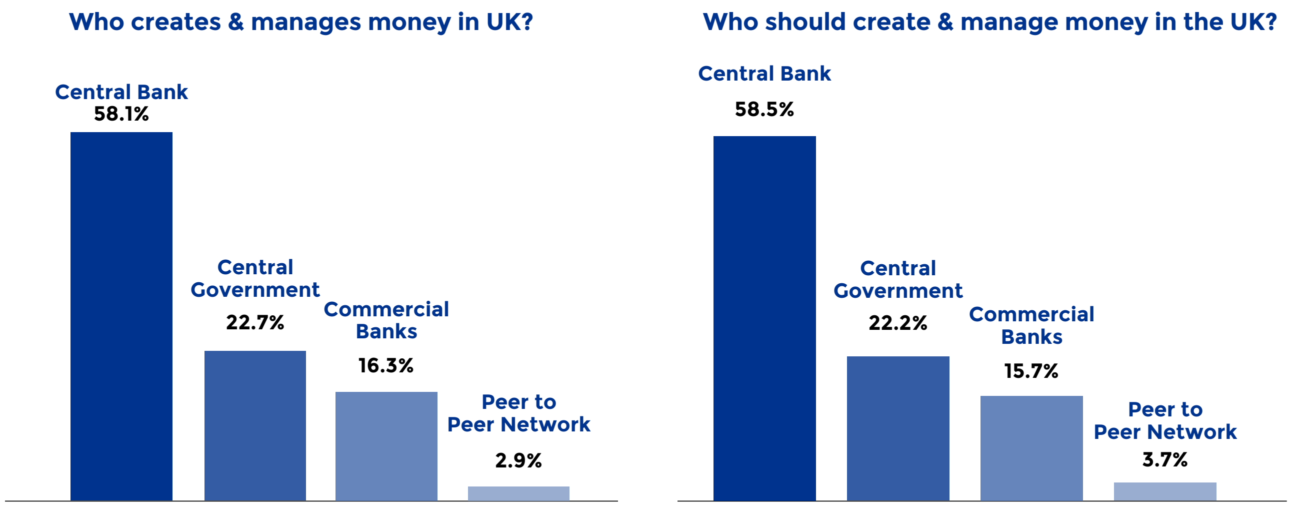
Looking at current usage of different types of money in the UK, the majority of residents make use of cash (77%), debit cards (70%), and credit cards (61%) on a daily or weekly basis. The newly emerging online payment companies have around 30% usage on a daily or weekly basis.



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

III. KNOWLEDGE OF AND TRUST IN MONEY IN THE UK

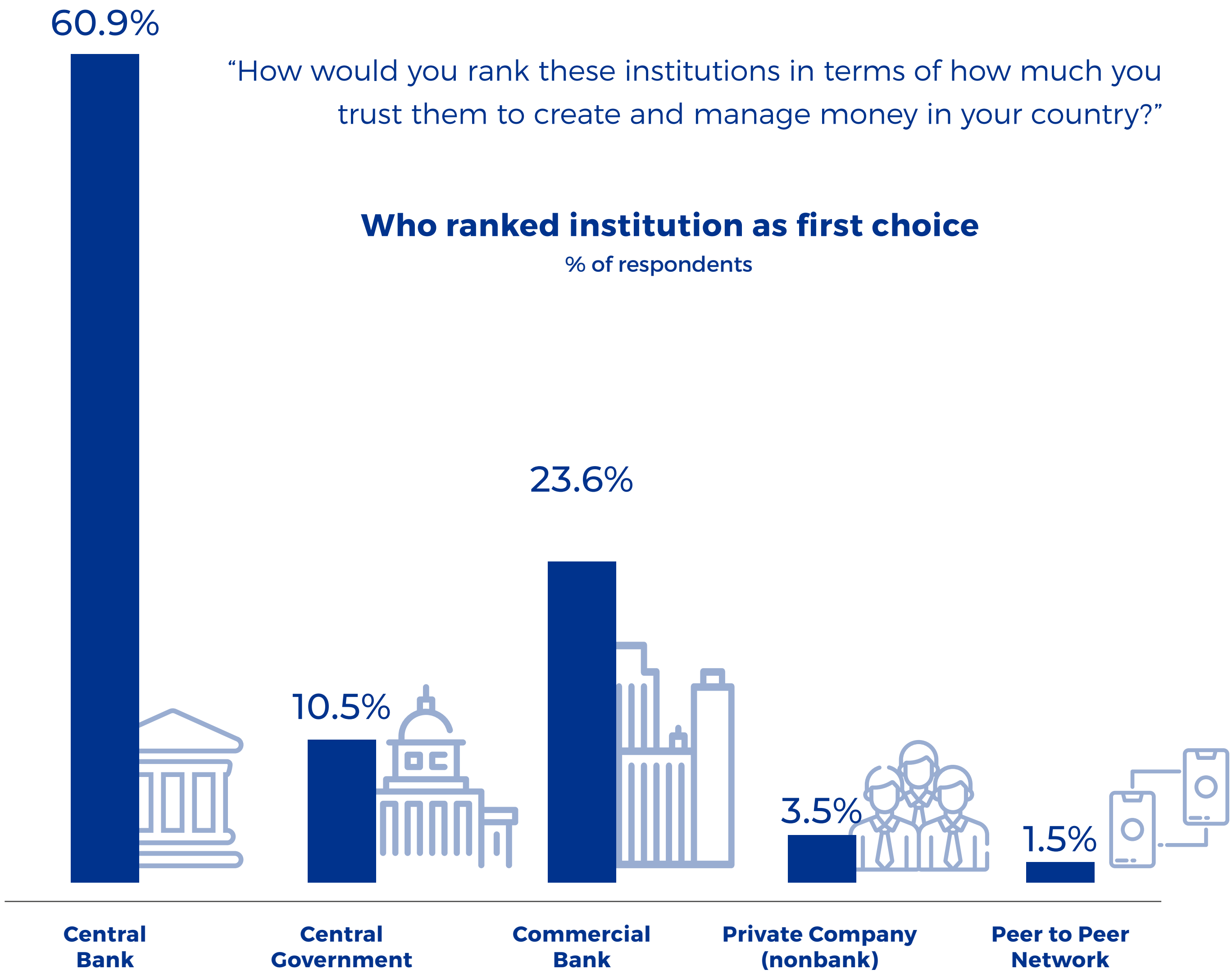
To get an understanding of how well UK residents understand some basics regarding the issuance and management of money, we asked respondents who they thought created money and who they thought 'should' create money. The results suggest that the majority of UK residents (58%) correctly believe that the central bank creates and manages money. The other creator of money, commercial banks, were unsurprisingly less well known with only around 16% of UK residents believing that they create money. Surprisingly, more respondents believed that the central government created and managed money (31%) than commercial banks. Comparing the left and right hand side, it also appears that UK residents are pretty content with who they currently believe creates and manages money (no significant changes are desired).

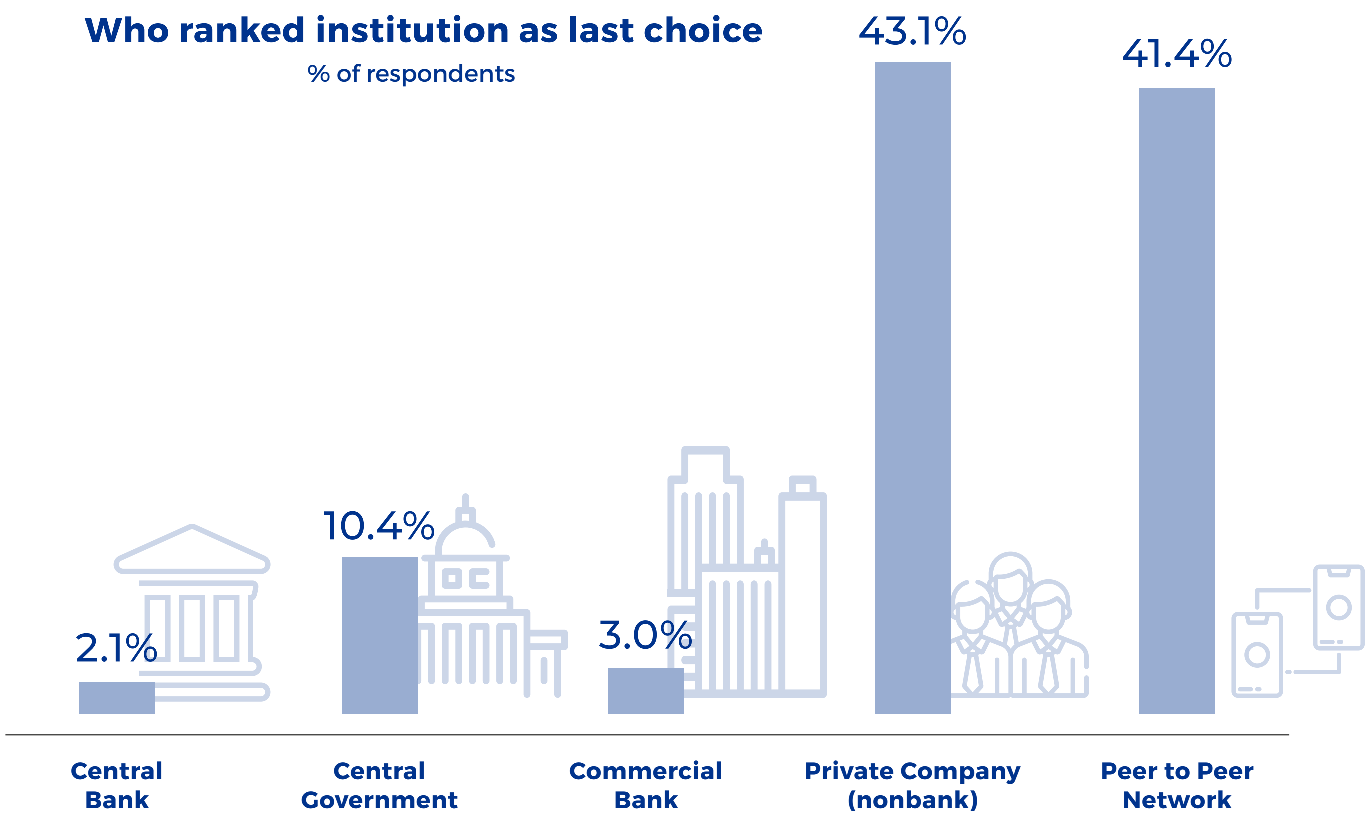


SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

In the presence of many new potential forms of money in the 21st 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 UK residents trust different types of institutions to create and manage money, we asked them 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, UK residents trust the central bank with around 60% 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 (11%), commercial banks fared much better with 24% 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 1.5% of UK residents ranking peer-to-peer networks as their first choice, and 3.5% 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.



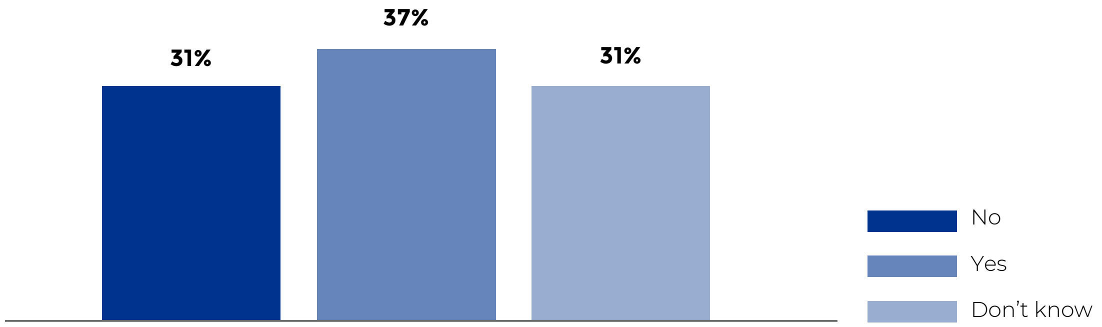


SOURCE: IE Survey ‘Cryptocurrencies and The Future of Money’

The relative low levels of trust in government (as compared with the central bank and commercial banks in the UK) 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.

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, 31% of respondents believed that government has not done enough, 37% believed that government has done enough. The remaining 31% of respondents were uncertain about whether has taken meaningful steps.

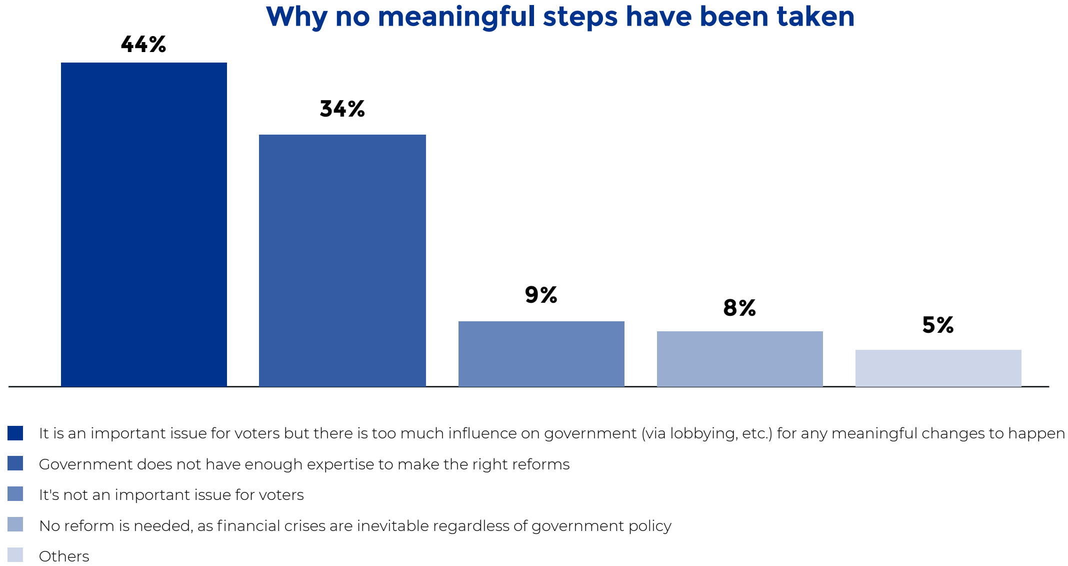
Government has taken meaningful steps by regulating the banking sector since 2008 to prevent another financial crisis



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, the most common response (44%) was a belief 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 popular option was a belief that government does not have the expertise to make the right reforms (34%). 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.

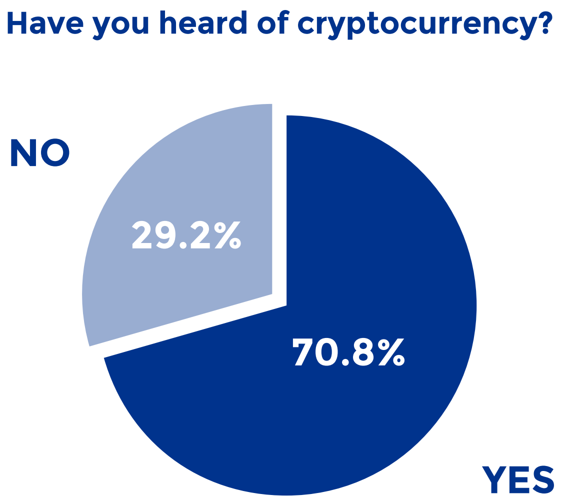
Why no meaningful steps have been taken

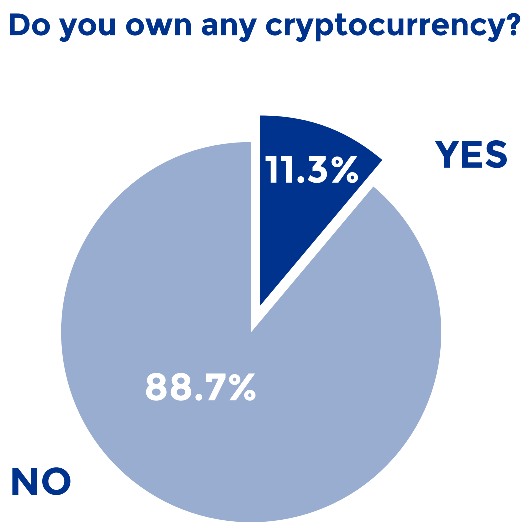


SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

IV. ATTITUDES TOWARD CRYPTOCURRENCIES IN THE UK

In a June 2018 survey, ING found that 61% of UK residents had heard of cryptocurrency with around 8% claiming to own some form of cryptocurrency[2]. In August of 2019 these figures rose to 71% and 11%, respectively suggesting a growing awareness of, and interest in, cryptocurrencies among UK residents.



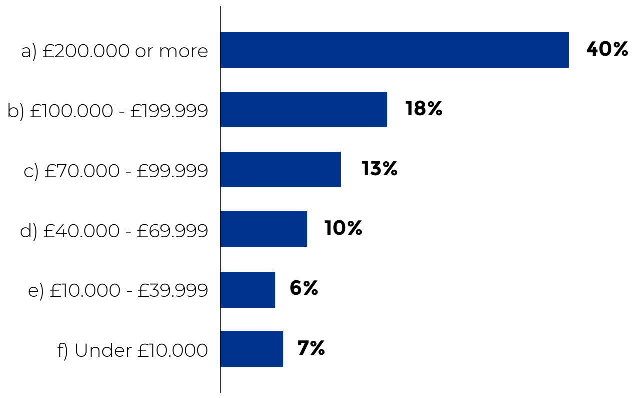


SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

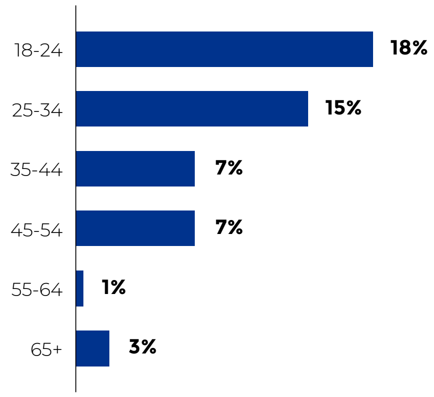
Breaking ownership down by income, levels tend to be higher amongst wealthy residents with the around 40% of respondents (income over 200,000 Pounds) owning some cryptocurrency, and 18% with of respondents with income between 100,000 and 200,000 Pounds. For all other income bands, ownership levels are smaller averaging 9%. With respect to age, the majority of owner are in the 18 - 34 age group with very little ownership (around 2%) amongst those 55 and up. The result that cryptocurrencies are largely owned by young and wealthy UK residents, suggesting that these are likely to be investments rather than for day to day transactions. There are small differences across education with more educated respondents somewhat more likely to own cryptocurrencies. There are also large difference in ownership between men and women where men are almost two times more likely to own cryptocurrencies.

2 See https://think.ing.com/uploads/reports/ING_International_Survey_Mobile_Banking_2018.pdf

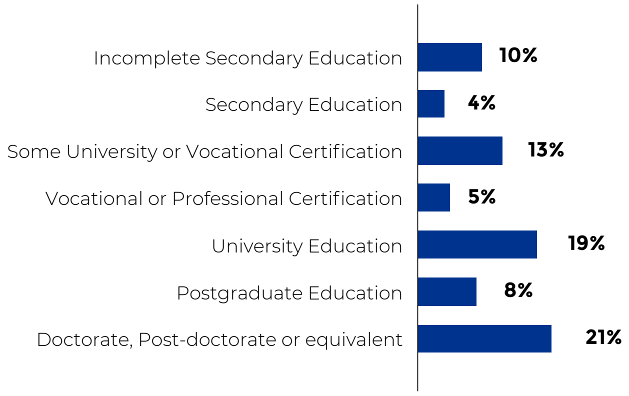
Ownership of cryptocurrency by income



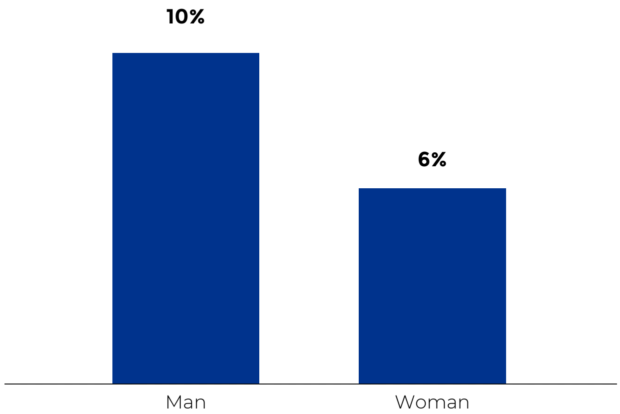
Ownership of cryptocurrency by age



Ownership of cryptocurrency by education



Ownership of cryptocurrency by gender



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

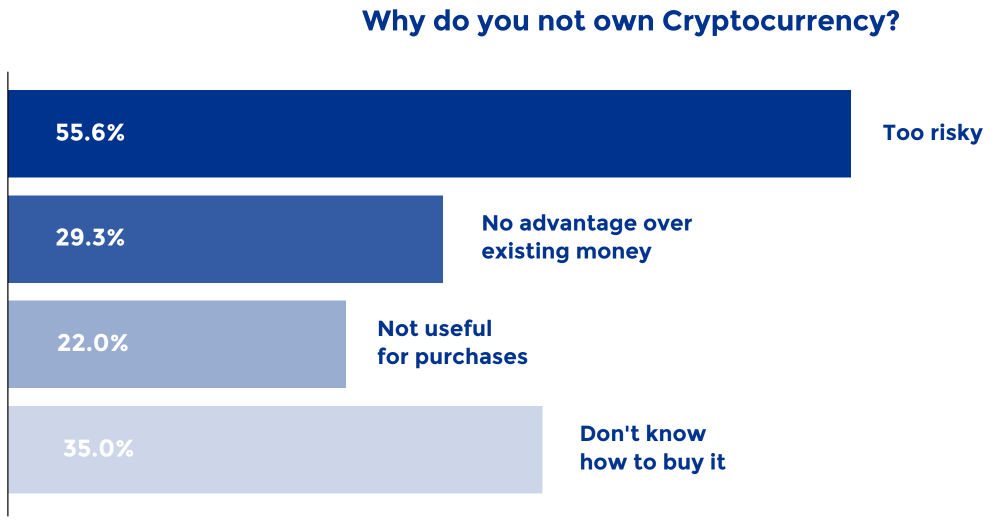
To validate this, the survey asked those UK residents who owned cryptocurrency whether it was as an investment or to make purchase.

Unsurprisingly, the majority (58%) of cryptocurrency owners hold them specifically as an investment with only 26% using cryptocurrency specifically to make purchases. In this sense, cryptocurrency is not really a currency in the UK, 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 (56%) 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 (in Latin American countries, this was the most popular option).



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

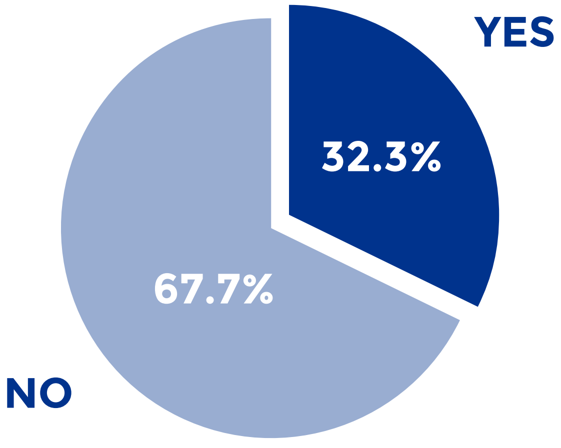
Putting these findings together, an increasing number of UK residents are becoming aware of cryptocurrencies but ownership is still very limited. The majority of current owners are young wealthy males who hold these as an investment. There is some potential for cryptocurrencies to expand their ownership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

V. THE FUTURE OF CRYPTOCURRENCY IN THE UK

As noted above, there are over 2,000 different cryptocurrencies in 2019 which can be bought or sold by UK residents 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 UK residents 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 UK 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?”

Would you use an effective private currency?



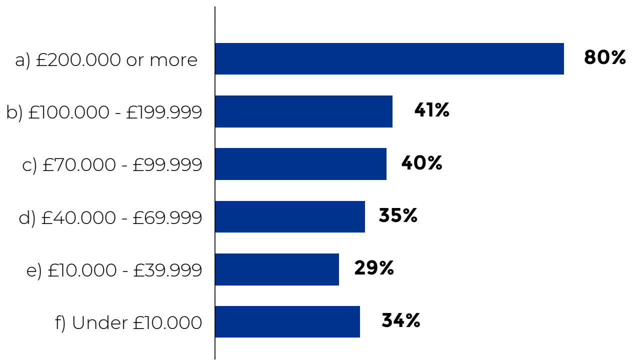
SOURCE: IE Survey ‘Cryptocurrencies and The Future of Money’

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 32% of UK residents 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.

A willingness to use an effective digital currency follows a similar pattern across income, age and education but not gender. 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 200,000 pounds, however, the difference here are smaller than those from current ownership of cryptocurrencies. Young people progressively more likely to support a new effective cryptocurrency, but men and woman have similar levels of support (31% and 34%, respectively).

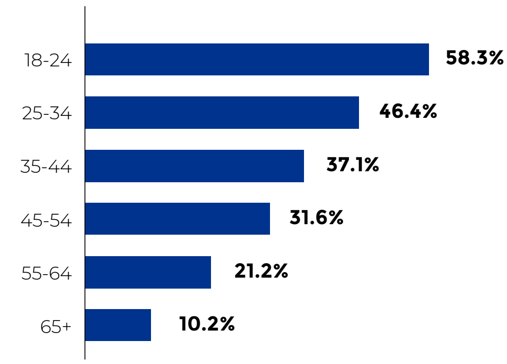
Would you use an effective private currency?

BY INCOME



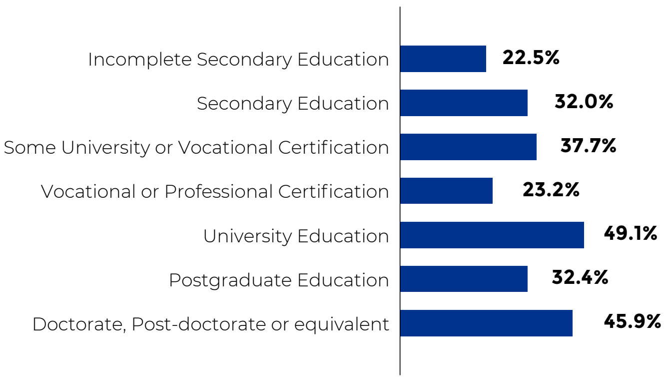
Would you use an effective private currency?

BY AGE



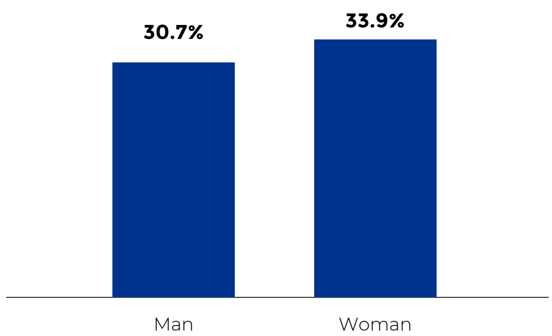
Would you use an Effective Private Currency?

BY EDUCATION



Would you use an Effective Private Currency?

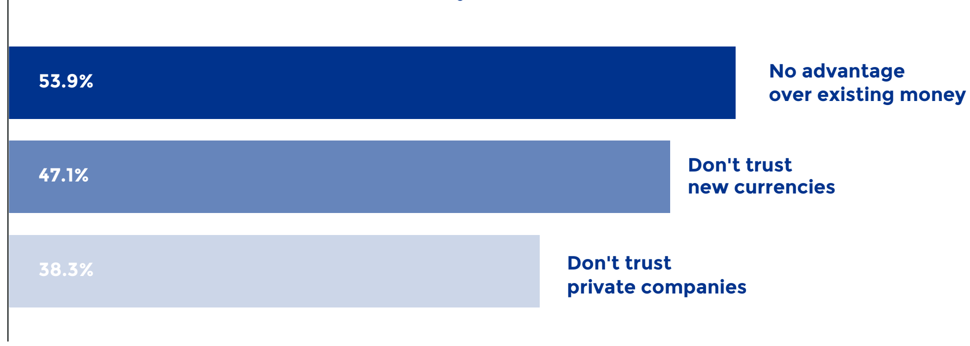
BY GENDER



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

Amongst the 68% of UK residents 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 (47%) and private companies (38%). 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 annoucement by Facebook that they, along with a large pool of high profile partners, would lauch the 'Libra' in 2020 came a flood of sepculation about its potential for success. Following this announcement, a significant proportion of the general public have expressed pessimisitc views of the Libra given the low levels of trust in Facebook in managing valuable information.

The results from our survey are pessimistic regarding the future of Libra in the UK. Around 4% of UK residents stated that they would trust Facebook to issue a currency with 96% responding that they would not. There were significant differences across age but only small differences across income.

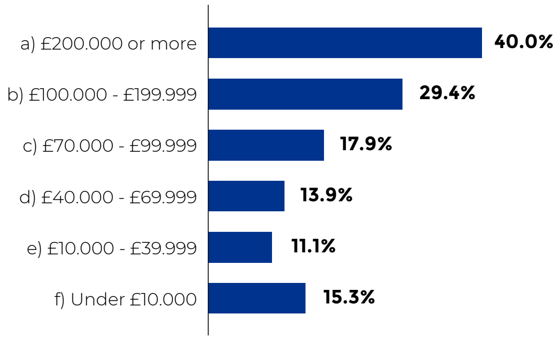
Trust in Facebook to issue a private currency

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

Among the around 4% of UK residents who said they would support Facebook's Libra, these tend to be young educated males. Interestingly, there does not appear to be any significant variation across education and there is slightly more support amongst more wealthy respondents (around 35% for those with income over 100,000 pounds and around 13% for those with income under 70,000 pounds).

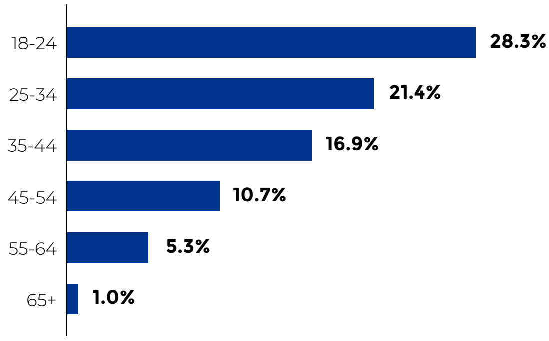
Trust in Facebook to issue a private currency

BY INCOME



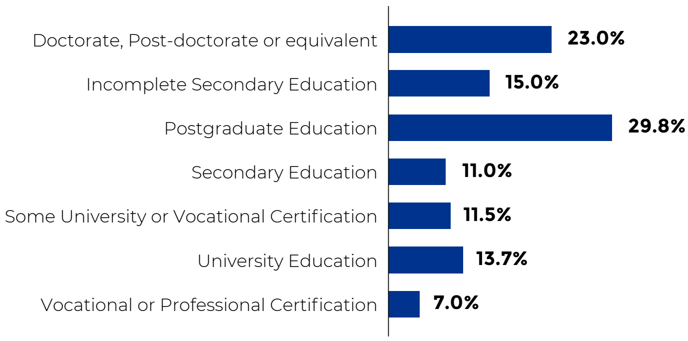
Trust in Facebook to issue a private currency

BY AGE



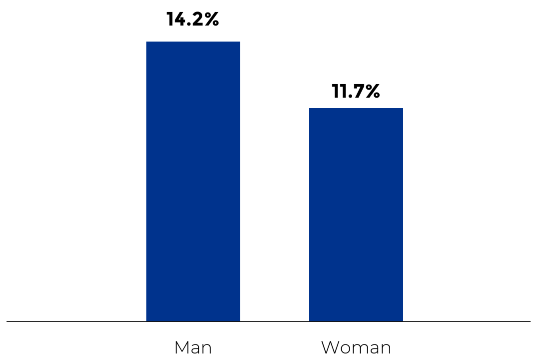
Trust in Facebook to issue a private currency

BY EDUCATION



Trust in Facebook to issue a private currency

BY GENDER



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

VI. A CONJOINT ANALYSIS OF PREFERENCES FOR MONEY IN THE UK

While the above discussion is helpful in gaining a deeper understanding of usage, knowledge, and trust of money in the UK, understanding exactly what characteristics of money are important to UK residents requires a systematic approach. Fortunately, a choice based conjoint analysis is an excellent way to measure the relative 'utilities' that UK residents 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 UK 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.

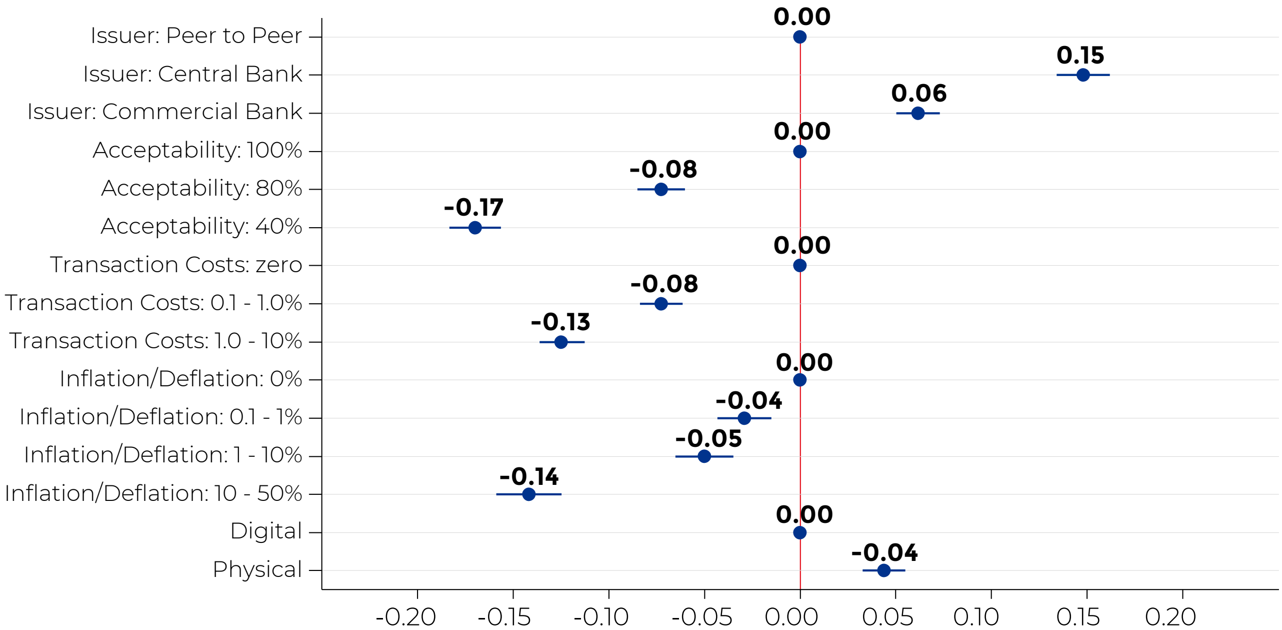
ATTRIBUTE	ATTRIBUTE CHARACTERISTIC
ISSUER/BACKER	• Central bank • Private sector commercial bank • Private Sector peer-to-peer network
ACCEPTABILITY	• All sellers accept the currency • 80% of sellers accept the currency • 40% of sellers accept the currency
TRANSACTION COST	• Zero • 0.1–1% of the transaction value • 1–10% of the transaction value
PRICE STABILITY	• Max monthly inflation/deflation of 0 % (100 = 100) • Max monthly inflation/deflation of 0–1% (100 = 99, or 100 = 101) • Max monthly inflation/deflation of 1–10% (100 = 90, or 100 = 110) • Max monthly inflation/deflation of 10–50% (100 = 50 or 100 = 150)
DIGITAL/PHYSICAL	• Digital • Physical

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 UK 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 Figure 2 that UK residents 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 Figure 2, UK residents 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, UK residents still appear to have a slight preference for physical cash.

Attitudes Towards Money – Conjoint Analysis



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 the UK all have very high levels of acceptability and relatively low transaction costs. In the introduction to this report, we also suggested that, like the US Dollar, the UK Pound 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, these is also a trust premium enjoyed by the Bank of England 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.

CENTER FOR THE GOVERNANCE OF CHANGE

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