

# CRYPTOCURRENCIES AND THE FUTURE OF MONEY

Money and Trust  
in Brazil

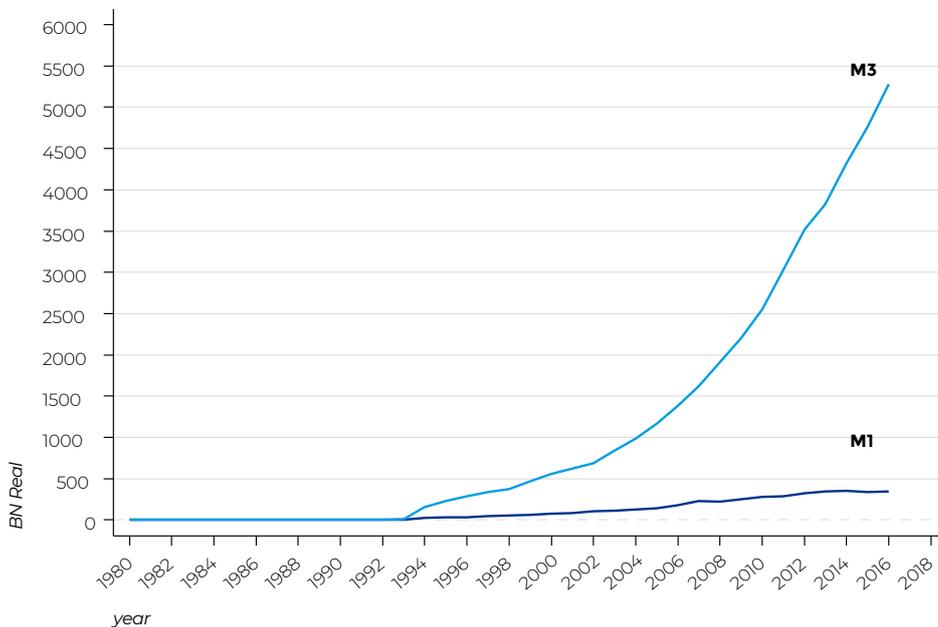
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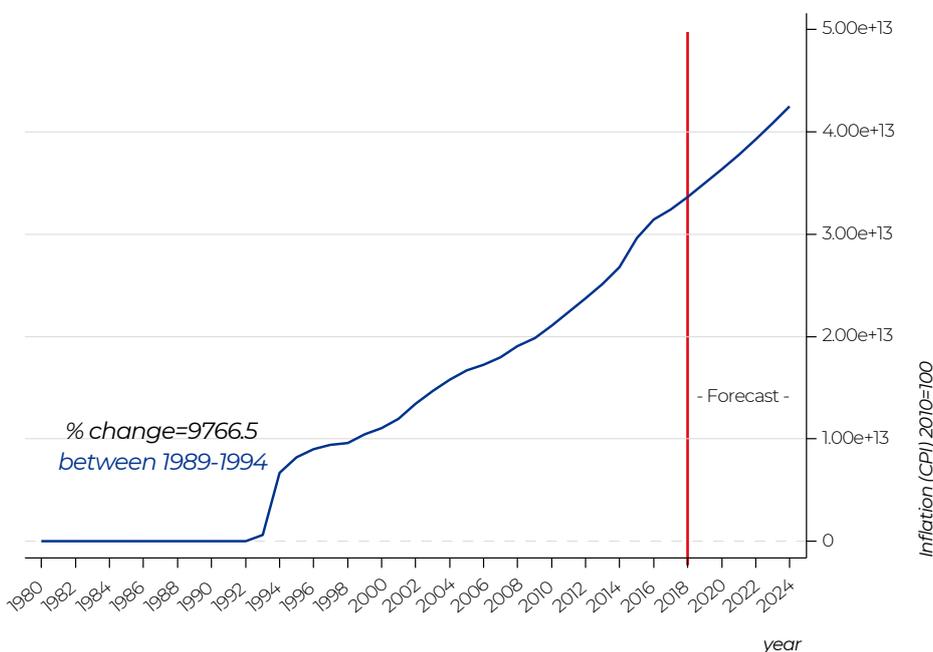
## I. BACKGROUND

Fiat money has had a complicated history in Latin America. Still, Brazil can be considered one of the success stories of the region. Because of mismanagement of government finances, Brazil faced a period of hyperinflation in the late 80s and early 90s. Different orthodox and unorthodox plans were attempted from 1986 to 1991, with no success in tackling inflation. Finally, in 1994 when inflation was hitting 5000% a year, a group of economists working in the ministry of finance managed to implement the 'Plano Real' and give credibility to its currency, the Brazilian Real. Since 1994, Brazil has lived a period of stability from a currency perspective and trust in the central bank. The country has now lived for more than 25 years of fairly stable inflation and the Brazilian Real still maintains the same denomination that it had in 1994, making it the longest living currency the country has had since its imperial money.

### Money Supply in Brazil



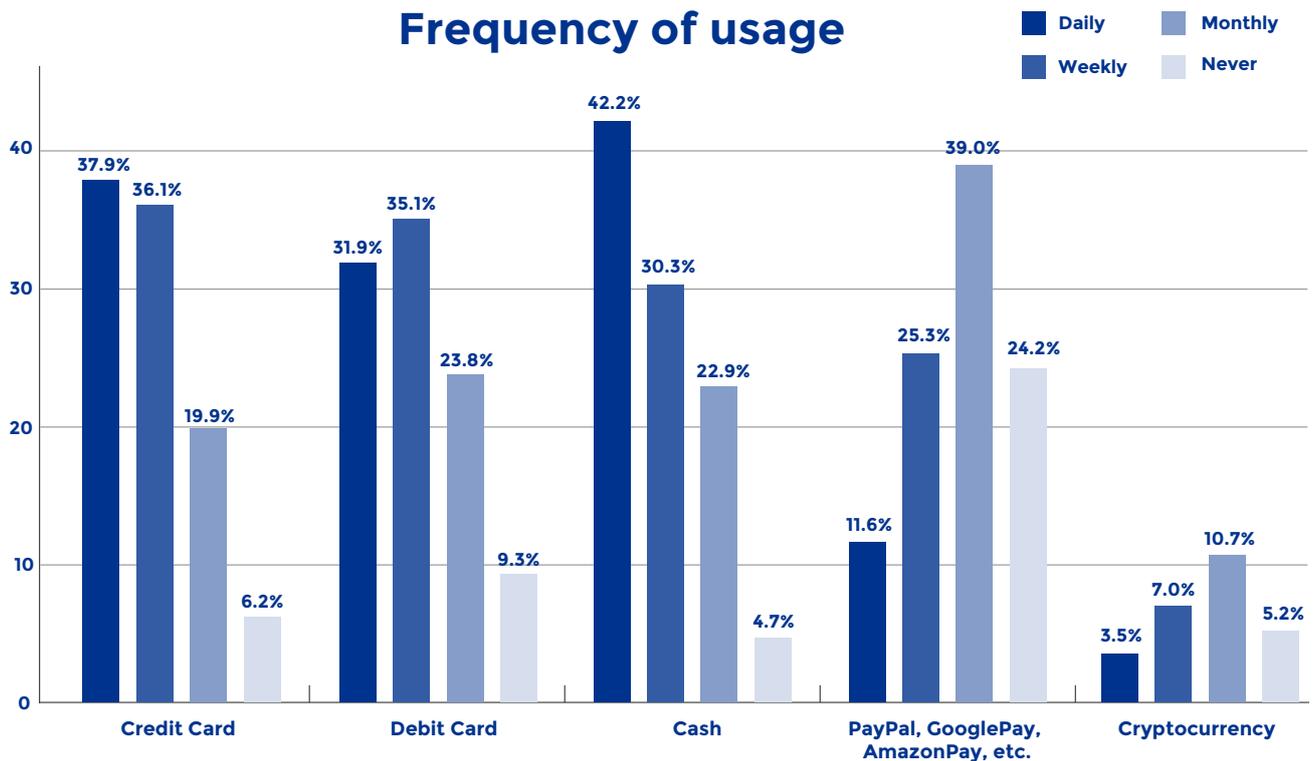
### Consumer Prices in Brazil



**DATA SOURCE:** IMF International Finance Statistics (top) and IMF World Economic Outlook (bottom)

## II. CURRENT USAGE OF MONEY IN BRAZIL

The data on the current usage of different types of money in Brazil suggests that Brazil's payments are highly financialized. The number of Brazilians who use credit cards (74 %) daily or weekly is even higher than those who use cash (72%). There is also a great share of those considered in the study that use debit cards (67%). Although not yet used by the majority of people, a meaningful share of the population uses online payment companies (37%) at the daily or weekly frequencies—number significantly higher than in other countries in our sample.<sup>1</sup>



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

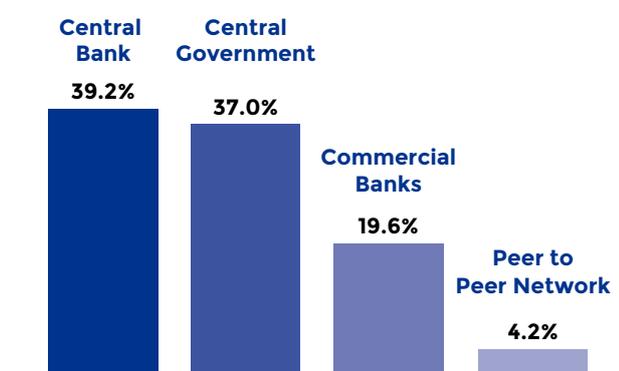
As it would be expected, cryptocurrencies are the less used types of currencies at all frequencies. Nevertheless, Brazil presents a surprisingly high use of these cryptocurrencies. In fact, in our sample, Brazil is the country where the highest percentage of users have told they use this type of currency.

<sup>1</sup> Sample includes Argentina, Brazil, France, Germany, Mexico, Spain, UK, and USA

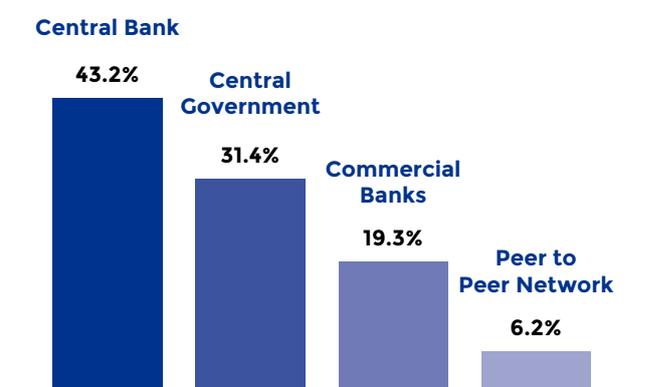
### III. KNOWLEDGE OF AND TRUST IN MONEY IN BRAZIL

Our survey results indicate that Brazilians do not have a clear understanding of central bank independence. When asked who is responsible for creating money, government and central banks got almost the same proportion of answers. But when asked who should be responsible for creating and managing money, the central bank appeared as a clear preference, with 43% of the answers, in comparison to 31% for central government. This suggests that although central bank independence to create and manage money might not be clear in the mind of Brazilians, the monetary authority has more credibility than the central government to perform this task.

Who creates & manages money in Brazil?



Who should create & manage money in Brazil?



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

“How would you rank these institutions in terms of how much you trust them to create and manage money in your country?”

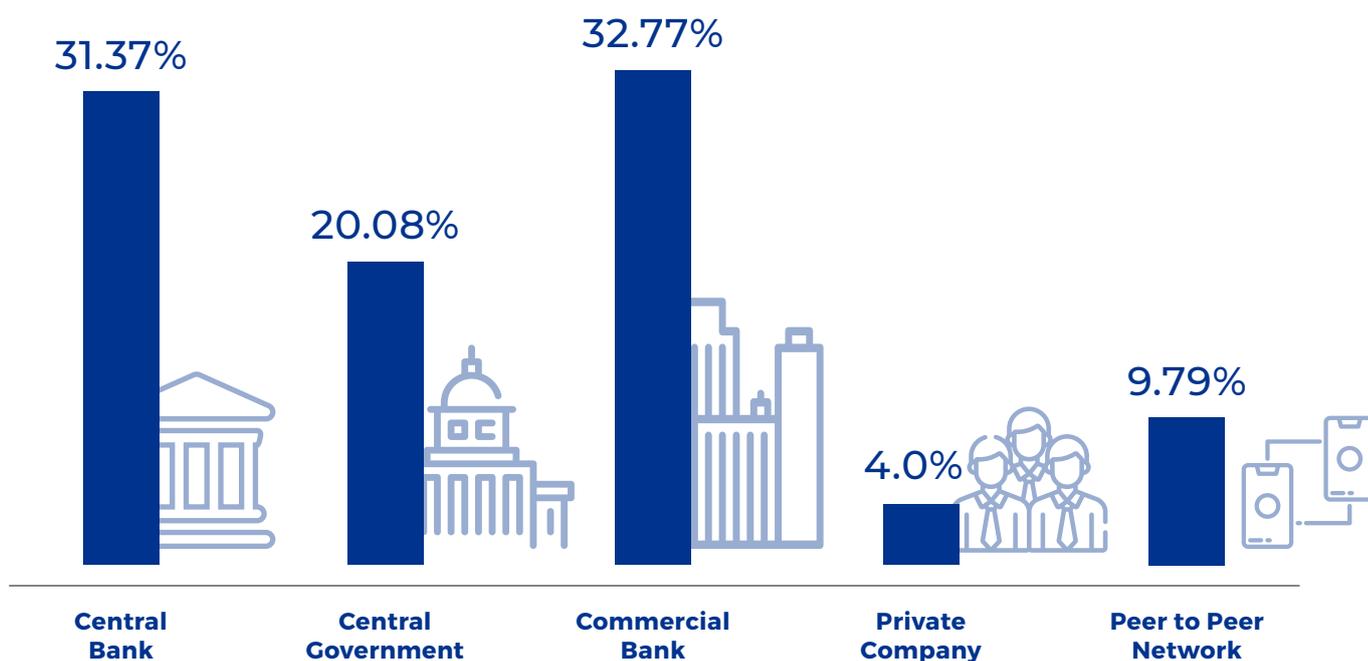
These results suggest a preference amongst Brazilians for the central banks when considering who they find most trustworthy in terms of creating and managing money.

However, the Brazilian Central Bank shares the position of most trusted institution to issue and manage money with the commercial banks. To understand the reasoning behind why Brazilians seem to have such a high level of trust in their commercial banks – in contrast to Europe and the US – we need to consider the structure of the financial system. Brazil has an extremely concentrated banking system. The most recent report of financial concentration produced by the Brazilian Central Bank in 2018 indicates that the five biggest banks are responsible for 81% of the volume in accounts and 85% of credit operations.

The concentration and stability of these large banks may help to explain why Brazilians place relatively higher levels of trust in them. This is especially evident in the much lower levels of trust in a less historically stable central government.

## Who ranked institution as first choice

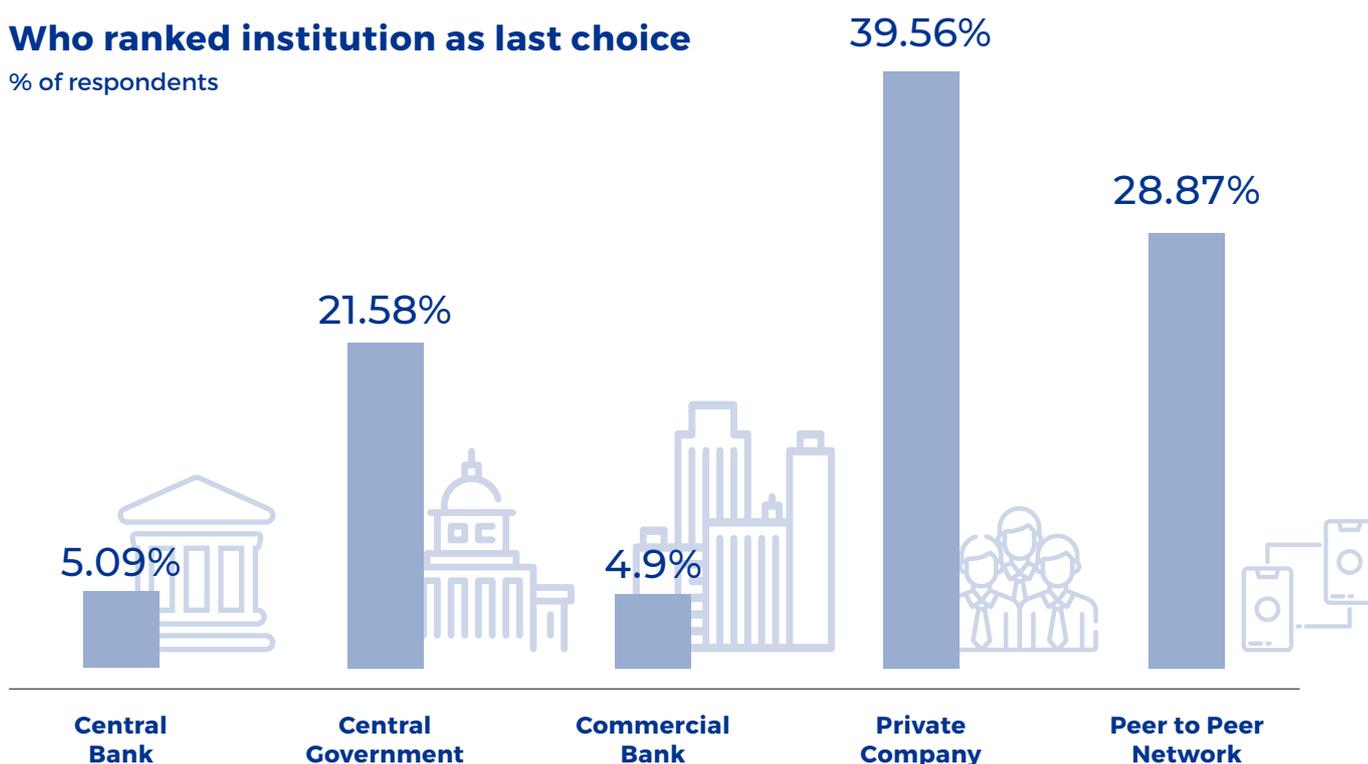
% of respondents



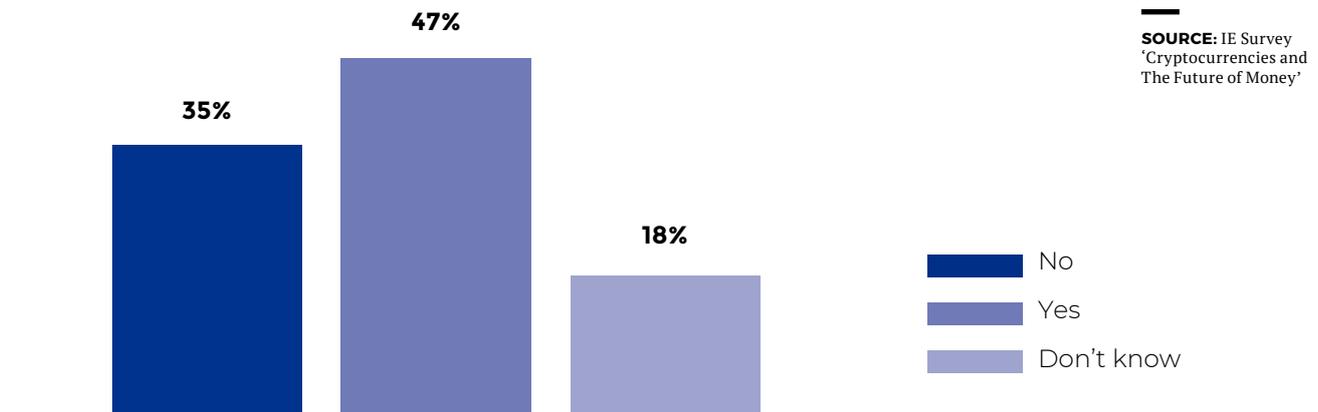
Lagging behind commercial banks, the central bank and government are peer to peer network and private companies. In fact, private companies are even less preferred to create and manage money than peer to peer networks. This reinforces the discussion above—Brazilians do not trust private companies, in general, to create and manage money. But this does not hold for banks. In fact, Brazilians see their commercial banks as being more trustworthy than central bank and central government!

## Who ranked institution as last choice

% of respondents

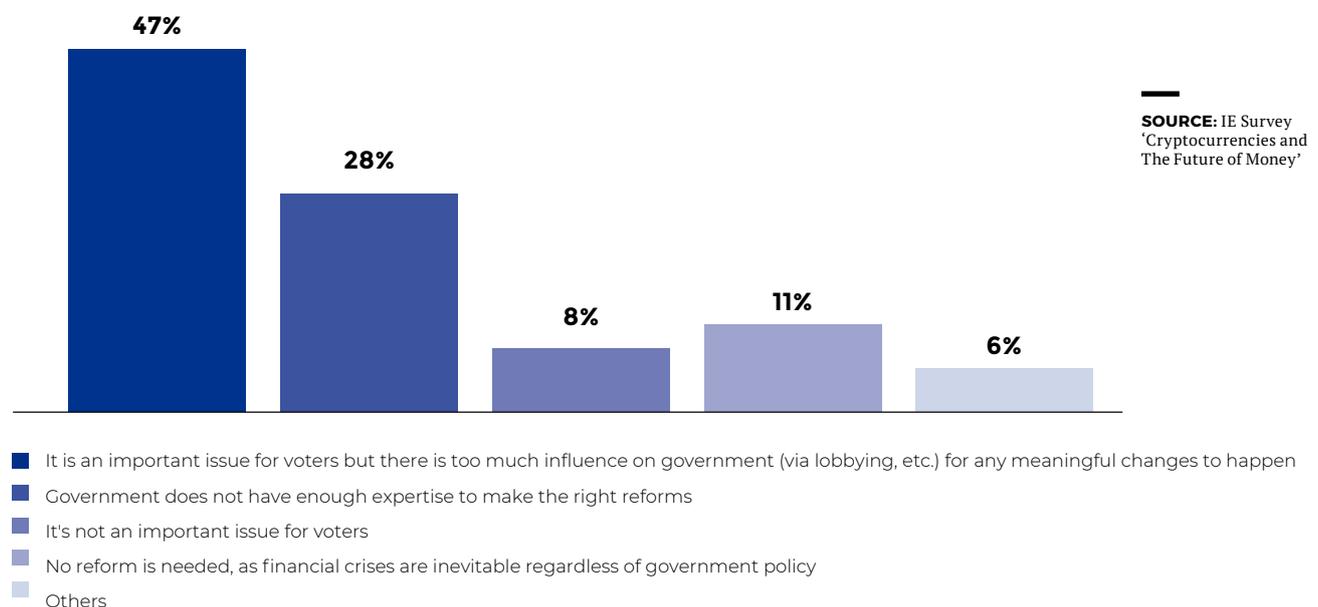


## Government has taken meaningful steps by regulating the banking sector since 2008 to prevent another financial crisis



When asked if the government has taken meaningful steps by regulating the banking sector to prevent another financial crisis, the most common answer given by Brazilians was yes (47%). A total of 35% of respondents answered no and 18% didn't know. The reason for this relatively positive answer, when compared to other countries in our sample, possibly has to do with the fact that the 2008 crisis wasn't as harsh on Brazil if compared to the crisis the country experienced from 2013 to 2016 due to its fiscal issues.

## Why no meaningful steps have been taken



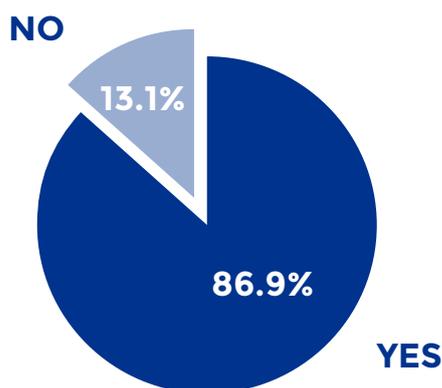
For those who answered that the government has not taken meaningful steps in regulating the banking sector to prevent another financial crisis, the reasons for doing so are very similar to those from other countries in our sample. A total of 47% of these Brazilians believe that this is an important issue for voters, but there is too much influence on government for any meaningful changes to happen. A significant proportion (28%) of Brazilians believes that the government has not taken meaningful steps because it does not have enough expertise to make the right reforms. From the remaining options, 11% answered that no reform is needed since financial crises are inevitable regardless of government policy, 8% believe this is not an important issue for voters mentioned some other reason.

## IV. ATTITUDES TOWARD CRYPTOCURRENCIES IN BRAZIL

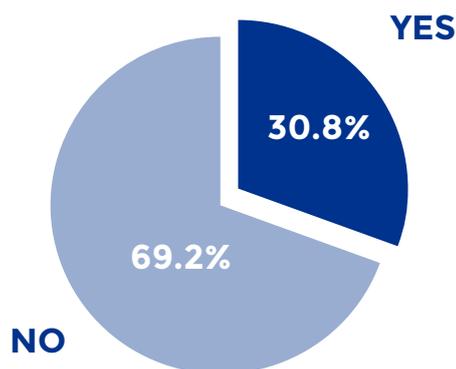
Previous studies have already revealed an enthusiasm of Brazilians towards cryptocurrencies. According to the results of a recent Statista Global Consumer Survey<sup>2</sup>, Brazil places second in the rank of countries by usage or ownership of cryptocurrency. In fact, it was documented that by 2018 there existed 1.4 million accounts at the main crypto brokerage firms in Brazil. This makes the number of crypto trading accounts higher than the 600,000 traditional stock brokerage accounts in the country<sup>3</sup>.

The results from our survey reinforce this conclusion. A total of 87% of the Brazilians in our sample said they have heard of cryptocurrencies while 30.8% said they own some cryptocurrency. These numbers are very impressive. Brazilians have the highest percentage of the population owning cryptocurrency in our sample, which is surprising when compared with more financialized countries like the US. Surprisingly, 87% of Brazilians in our sample have heard of cryptocurrencies against 69% of Americans and the percentage of those who own cryptocurrency in Brazil (30.8%) is twice as much that of the U.S. (15.8%).

Have you heard of cryptocurrency?



Do you own any cryptocurrency?



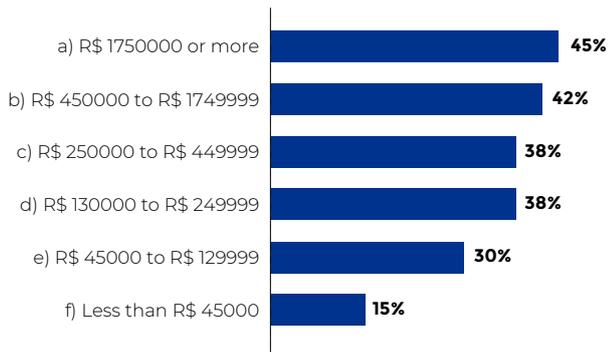
**SOURCE:** IE Survey 'Cryptocurrencies and The Future of Money'

In terms of how this ownership of cryptocurrency is distributed across different levels of income, age, education and gender, the results follow the same pattern of other countries in our sample. The percentage of Brazilians that own any cryptocurrency increases with the level of income and education. However, even if this percentage increases with income, in Latin American countries (Argentina, Brazil and Mexico) the ownership of cryptocurrency is much more evenly spread across different levels of income than in the developed markets considered in our sample (USA, UK, Germany and Spain). Age also seems to be an important dimension with respect to the ownership of cryptocurrency, with younger generations of Brazilians being more likely to own these currencies than the older ones. Finally, as it generally is the case for assets and currencies that involve more risk, the ownership of cryptocurrency is significantly higher amongst males than females.

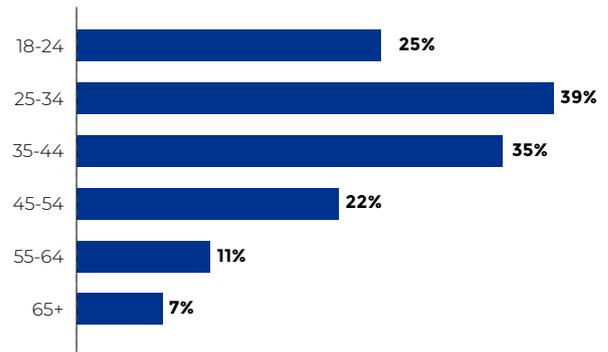
<sup>2</sup> Available at: <https://www.statista.com/chart/18345/crypto-currency-adoption/>

<sup>3</sup> See: <https://www.forbes.com/sites/kenrapoza/2018/05/30/more-people-opening-crypto-trading-accounts-in-brazil-than-traditional-securities/#595616d77e21>

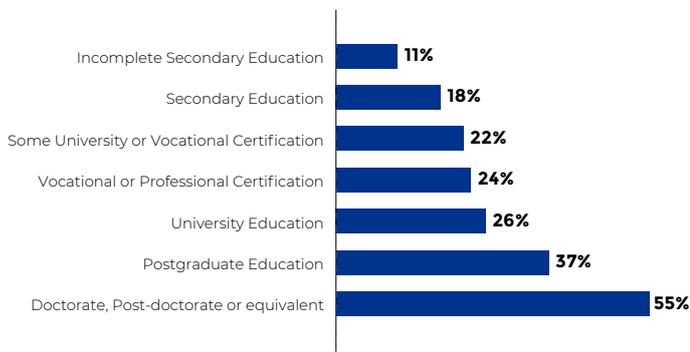
### Ownership of cryptocurrency by income



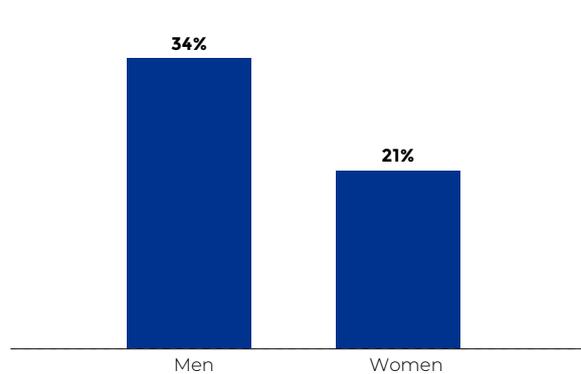
### Ownership of cryptocurrency by age



### Ownership of cryptocurrency by education



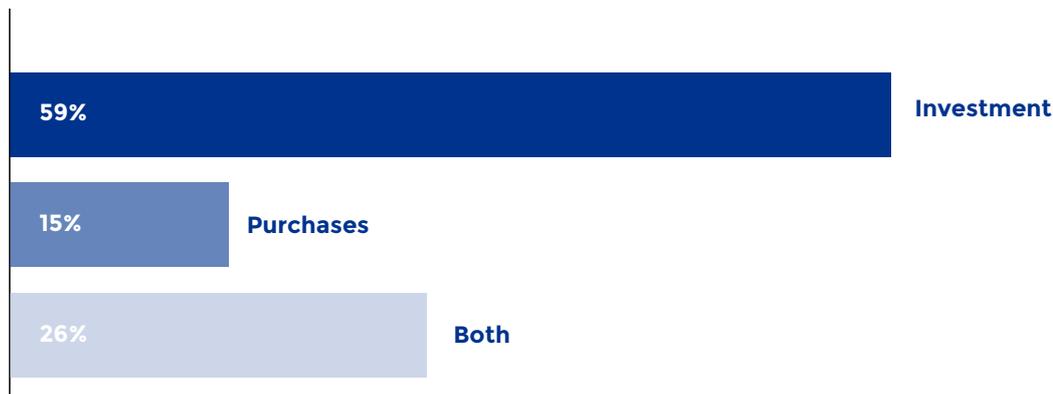
### Ownership of cryptocurrency by gender



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

For those who do own cryptocurrency, the results for Brazil are also very similar to the other countries in our sample. The majority of the owners of these currencies have them as investments (59%). About a quarter use them as both investments and for purchases and only about 15% answered they use cryptocurrencies as a purchasing tool.

### Why do you own cryptocurrency?



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

The impressively high interest among Brazilians in cryptocurrencies becomes even more clear when we analyze the answers for why those who don't own these currencies do so. In contrast to the developed countries in our sample (USA, UK, Germany and Spain), where most of the people don't own crypto currencies because they believe they are too risky, almost half of the subsample in Brazil answered they don't buy these currencies because they don't know how to buy them. This means that out of the 70% of Brazilians who answered they don't own cryptocurrencies, almost 35% said they don't own them because they don't know how to buy. This is surprising—when analyzed together these two things indicate that approximately 65% of Brazilians either own or would be interested in owning crypto currencies, but do not know how to do so.

It is worth mentioning that significant share of the Brazilians who don't own cryptos in our sample have answered that they don't own cryptocurrencies because they believe they are too risky (29%), they are not useful for purchases (20%) or they see no advantage over existing money (10%).

### Why do you not own cryptocurrency?



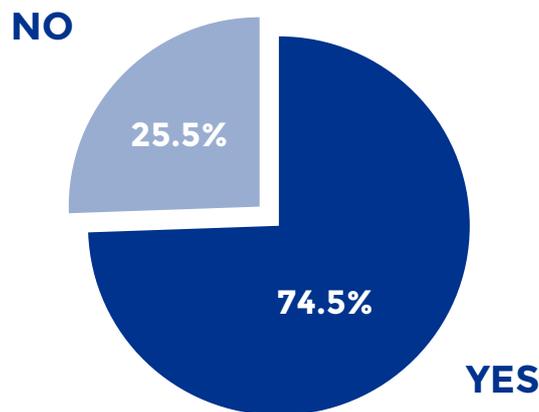
SOURCE: IE Survey 'Cryptocurrencies and The Future of Money'

## V. THE FUTURE OF CRYPTOCURRENCY IN BRAZIL

To gauge the Brazilian public's appetite for a well-designed and efficient cryptocurrency which is issued by a private company, we asked respondents:

**Q20: "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'

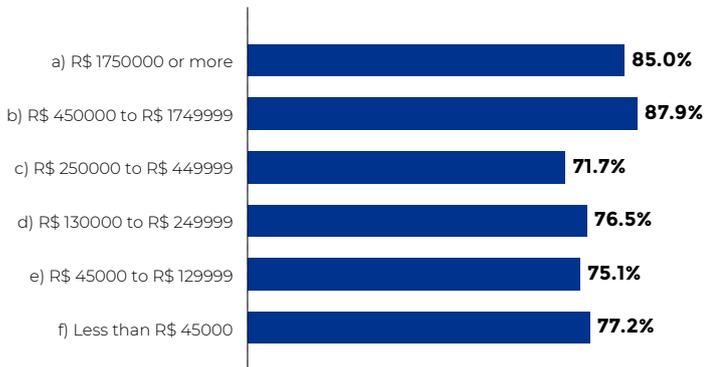
The open-mindedness of Brazilians to other types of currencies is reinforced by their answers to this question. The response of Brazilians follows a similar pattern of the other Latin American countries in our sample (Argentina and Mexico). Possibly because of the bad experiences they had with fiat money in the 90s, these countries had a significant majority of people in the sample who answered yes (74.5% in the Brazilian case) when asked if they would use an effective private currency with those properties.

As it can be seen bellow, the positive answer with respect to the use of such private currency is fairly evenly spread across levels of income, age, education and gender<sup>4</sup>.

<sup>4</sup> With a slight reduction in older groups of the population which is completely understandable to anything related to technology.

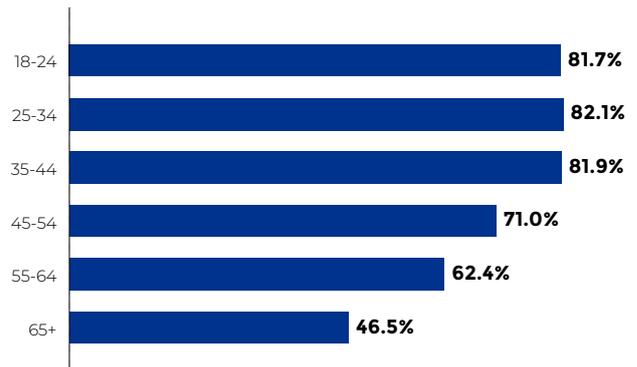
### Would you use an effective private currency?

by income



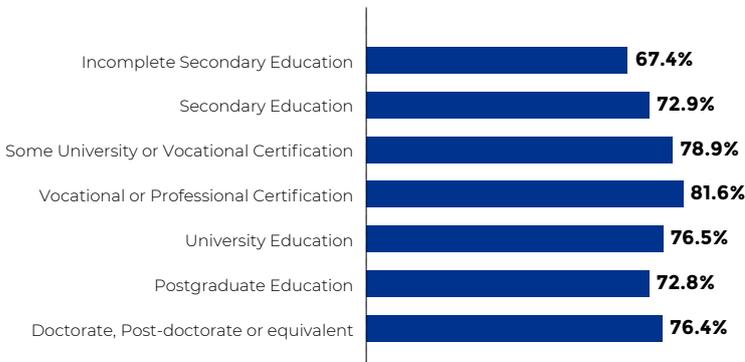
### Would you use an effective private currency?

by age



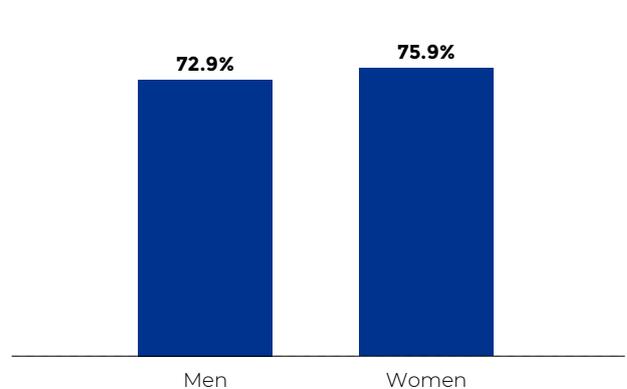
### Would you use an effective private currency?

by education



### Would you use an effective private currency?

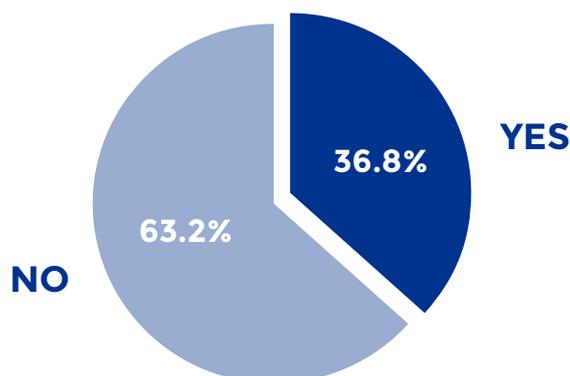
by gender



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

Despite their relatively high degree of openness to new types of money, Brazilians don't share this enthusiasm when it comes to a private currency issued by Facebook. When asked if they trust Facebook to issue a private currency, only 36.8% of the Brazilians in our sample provided a positive response. Although this proportion is significantly higher than those who answered yes in more developed economies (US, UK, Germany and Spain), it still signals a low level of trust among Brazilians in Facebook to be become a monetary institution.

### Trust in Facebook to issue a private currency



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

As it was the case for a generic privately issued currency, the answers to this question were evenly spread across levels of income, education and gender. With respect to age, we observe a significant decrease in trust on Facebook as we move towards older age groups. Moreover, people who have doctorate (and further) degrees have a higher level of trust on Facebook to issue a currency, possibly because they might have a better understanding about the potential benefits of Libra (Facebook’s currency) in comparison to other cryptocurrencies.

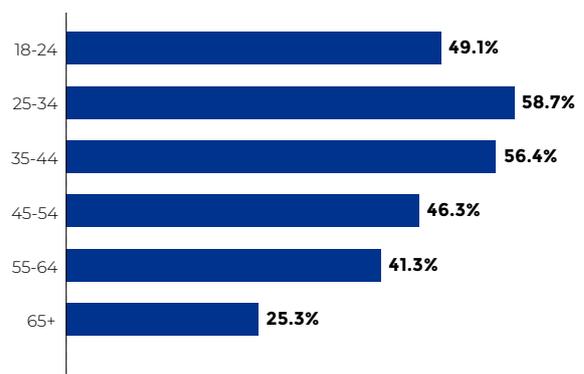
**Trust in Facebook to issue a private currency**

BY INCOME



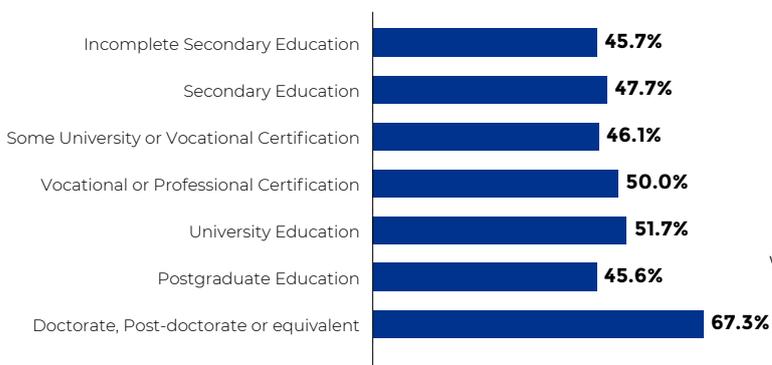
**Trust in Facebook to issue a private currency**

BY AGE



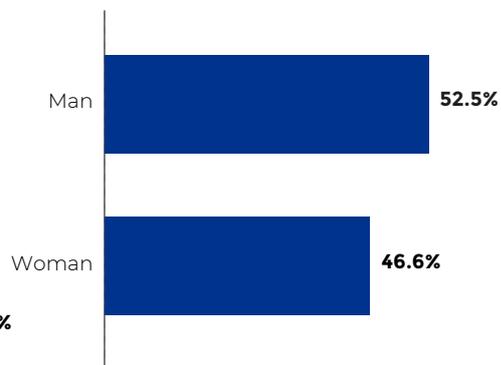
**Trust in Facebook to issue a private currency**

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 BRAZIL

While the above discussion is helpful in gaining a deeper understanding of Brazilian usage, knowledge, trust of money. Understanding exactly what characteristics of money are important to Brazilians requires a systematic approach. Fortunately, a choice based conjoint analysis is an excellent way to measure the relative ‘utilities’ that Brazilians 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 Brazil 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.

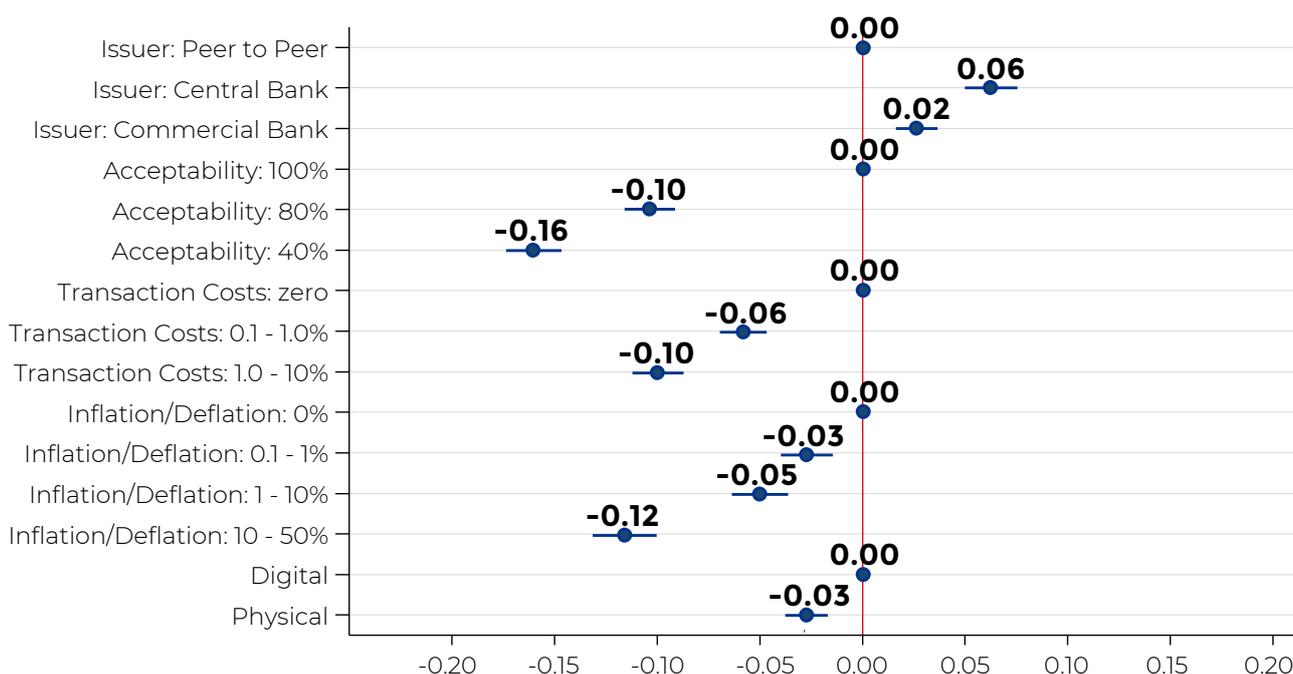
Each of these five attributes was assigned between two and four options shown below.

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 Brazilians 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 placed on specific characteristics of money. For example, we can see from the figure below that Brazilians 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, Brazilians 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 some tolerance of moderate levels of inflation). Lastly, when comparing digital with physical money, Brazilians appear to have a slight preference for digital forms of money.



The results from the conjoint survey show that preferences of Brazilians are very similar to those of other countries. If we look at traditional forms of money (cash, credit cards and debit cards), they all fulfil dimensions that Brazilians care a lot about: acceptability, low transaction costs and, at least since the Real was introduced in 1994, price stability. Moreover, although the answers to other questions indicated the openness of Brazilians to cryptocurrencies and private money, the results from the conjoint survey show that they have strong preferences for money issued by a trusted third part, and particularly by their central bank. Finally, the results from Brazil and other Latin American countries suggests that while in developed countries an interesting fact. While in developed countries (US, UK, Germany and Spain) people prefer physical to digital forms of cash, in Latin American countries the preference is the opposite. Obviously, there are many possible reasons why this may be the case, but a likely candidate is the hyperinflation faced by these countries in the 80s and 90s; once that holding cash is a poor choice in an environment with high inflation.



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