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Bitcoin and inflation: The role of cryptocurrency in Argentina

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Abstract:

Bitcoin, since its birth in 2009, has been subject to large debates on multiple dimensions, especially on the question whether it embodies a viable monetary alternative to fiat currencies. Previous research has suggested that in countries dealing with severe inflation, Bitcoin can indeed have helpful monetary implications. This thesis is concerned partly with finding out the exact relationship between inflation and Bitcoin usage via regression analysis, as empirical support for the notion that they are positively associated is currently lacking. Additionally, a case study considering Argentina is conducted to gain a deeper understanding about the possible correlation between inflation and Bitcoin usage. Argentina is an example of a country under enormous inflationary pressure, and the literature indicates that Bitcoin is being used here to evade value losses from depreciation of the domestic currency. Two ways can be deduced from theory about the exact way Bitcoin fulfills this role, involving either its “store of value” or its “vehicle currency” function. Via a survey design combined with a content analysis, there is aimed to identify which role is more significant in the Argentinian context. Finally, there is reflected on the findings in the light of preceding theory, and implications are discussed for a range of different actors.

Introduction

Since the first Bitcoin was mined back in 2009, signifying the birth of the Bitcoin blockchain infrastructure, the digital currency unfolded to something that can be considered as increasingly disruptive. Bitcoin, which in most basic terms is a decentralized "peer to peer electronic cash system[1]"(Nakamoto, 2008), hereby bypassing the need for intermediaries to facilitate transactions, has faced mainstream attention due to exceptional rises in the price. These surges climaxed in 2021, when the Bitcoin price reached an all-time high of over $63.000, reflecting a rise of approximately 700% – BTC/USD – over the course of the year (Business Insider, 2021). All of this was extensively covered in the news media, hereby bolstering a general understanding of Bitcoin as a speculative investment object.

Because of the increasing popularity, Bitcoin has in recent years been taken very seriously in the political context as well, which is reflected in the continuous debate about how it should be regulated. The difficulty in deciding on regulation is reinforced by the technological newness of it, which often is not part of the expertise of the authorities responsible for the implementation of legislation. Governments differ from completely accepting Bitcoin, banning Bitcoin, or choosing the middle-ground in its permittance (Hendrickson, Hogan & Luther, 2015).

The notion of Bitcoin as an investment object has been profound, however, apart from this particular understanding, the literature has also considered for whom the actual technology of Bitcoin can provide a real solution in the financial context. It seems that especially in countries under large financial distress, with currencies that are highly inflated, there have been developments with the utilization of Bitcoin as a hedge against the value depreciation of the local currency. Severe inflation that has been evaporating savings of citizens has become observable in Argentina, where the domestic currency, solely in 2020, depreciated with 42% when the CPI was concerned (IMF, 2021). The literature sheds light on specific political and financial circumstances that paves the way to Bitcoin adoption both in Argentina and beyond, and mainly indicates that Bitcoin can play an important role for citizens in circumventing severe value losses induced by inflation. Still, while describing the logical attraction of Bitcoin within countries under severe inflationary pressure, no recent study has yet comprehensively focused on measuring the exact relation between inflation and Bitcoin usage.

Furthermore, when accepting the idea that Bitcoin takes a prominent role in bypassing inflation within Argentina, there could be deduced two explanations from theory about the specific

[1] A brief introduction about the way Bitcoin works is included within the appendix.

way Bitcoin plays this role. Briefly, the explanations are distinguished by focusing on either of the two monetary roles of Bitcoin – a store of value and a vehicle currency. In this sense, Bitcoin is either used as a means to hold value on the long-term in contrast to the domestic currency that is rapidly depreciating (Cifuentes, 2019; Krause, 2016), or it is used as a vehicle currency that enables citizens to obtain 'hard' currency like US dollars, which they are unable to acquire via traditional ways because of extensive capital controls (Alborg, 2020; Pieters, 2017). With this in mind, the research question that this thesis attempts to answer is essentially two-fold. The first part is concerned with identifying if and how much Bitcoin usage is associated to inflation, while the second part considers how Bitcoin is being used exactly to provide a tool for evading inflation. Hence, this two-fold characteristic of the approach is incorporated within the formulation of the research question, which is reflected in a division so that essentially two main questions are explored:

(1) What's the relationship between inflation and Bitcoin usage?

(2) How does Bitcoin enable citizens to cover themselves from inflation of the domestic currency?

While the first question is partly examined by a quantitative analysis involving multiple countries, the second question is completely based on a case study considering the Argentinian situation, which is why the latter question could also be formulated as the following:

How does Bitcoin enable Argentinians to cover themselves from inflation of the domestic currency?

It's important to enhance our understanding about the possible empirical relation between inflation and Bitcoin usage, as high correlations could have several implications for multiple actors. For instance, it could alert authorities and traditional financial institutions that capital flight into digital currencies is lurking in cases of significant inflation within the local currency. Regulators that are aiming to prevent this from happening, given the objectives to maintain the strength of the local currency and to sustain a deal of financial control over the economy, could utilize the insights of this thesis to opt for measures focusing on the reduction of inflation. If instead the objective is to embrace Bitcoin as a technological innovation out of modernization purposes, its promotion for integration within the economy has probably higher chances in those monetary entities (e.g. countries) that are enduring a substantial amount of inflation within their currency. The latter also applies for the private sector, engaging in Bitcoin and incorporating it into business plans could be more effective in markets that are active in countries with severely inflationary currencies.

Furthermore, identifying which specific role Bitcoin plays in a country as Argentina is relevant, as it could yield implications for the actors in the country (e.g. private and public sector), but also perhaps for those from other financially distressed countries. The insights of this research could for instance be valuable for civil society in such countries that are under extensive inflationary

pressure, as it could raise their awareness that Bitcoin can be used in a particular way to hedge against inflation. For regulators, this study might produce findings indicating that traditional capital controls might become obsolete, as modern financial advancements like Bitcoin could provide the means to acquire foreign currency in a way that circumvents these restrictions. Hence, this thesis will therefore aim to contribute to the theory about political economic implications of Bitcoin as a technological innovation, that go beyond the speculative and profit-driven concerns.

Additionally, research on Bitcoin can be considered important because it is essentially a technological development which is still in the relatively early stages. It has now only been roughly ten years since the notion of a cryptocurrency originated, meaning that Bitcoin, or other cryptocurrencies for that matter, still can evolve a great deal in their technological as well as economic aspects. Furthermore, the amount of liquidity that is involved in the cryptocurrency market – $696,957,176,609 for Bitcoin (CoinMarketCap, 2021) – suggests that cryptocurrencies already play a significant role in the financial context and will likely continue to do so.

Literature review

2.1 Bitcoin regulation

Assessing what has been suggested in the literature about Bitcoin regulation is important as it helps us understand how governments feel about Bitcoin. It therefore provides us with insights about the position of central authorities with regard to Bitcoin, who can find it either threatening for the current financial architecture, or can see its potential to improve or perhaps even replace this monetary system.

According to the literature, a potential barrier for the monetary implications of Bitcoin is regulation (Krause, 2016; Jeans, 2015). Jeans, (2015) argues that the legislation surrounding digital currencies a state chooses to implement will crucially influence the way Bitcoin will be used and to what extent it will be an integrated part of the economy, even though Bitcoin is not as dependent on the endorsement of the government as is the case with traditional fiat currencies. The difficulty that arises when regulating Bitcoin stems from the fact that Bitcoin is a truly novel and disruptive innovation rather than an incremental modernization, therefore not falling into the realm of already existing legislation prior to the rise of cryptocurrencies (Jeans, 2015). Governments have dealt and for a large part are still dealing with a lack of information and empirical guidance when considering how to treat Bitcoin (Jeans, 2015), and regulation has therefore varied greatly from country to country (Jeans, 2015; Hendrickson, Hogan & Luther, 2015; Cifuentes, 2019).

Officials of countries that are hostile towards Bitcoin all brought comparable motivations to public notice when they introduced restrictive regulation with regard to Bitcoin and other ICO's. China, Ecuador and Bolivia are examples of countries that practically illegalized cryptocurrencies. The legislators in these countries stressed that these restrictions have been implemented to protect the citizens of large financial losses and to ensure financial security, as Bitcoin and other cryptocurrencies are not authorized by any legitimate authority, making them subject to speculation and extremely risky to invest in (Library of Congress, 2019). However, this reasoning is not in line with what the literature says about possible motivations for countries that ban Bitcoin. Hendrickson, Hogan & Luther, (2015) suggest that governments relying for a relatively large extent on seigniorage – gains following from interests on central bank lending – are likely more willing to secure the dominant role of the domestic currency by adopting policies that suppress Bitcoin, and there is imagined that this is the reasoning that drove China's decisions with regard to introducing anti-Bitcoin policies starting in late 2013. Similarly, Kaiser, Jurado & Ledger, (2018) also consider China's hostile stance towards Bitcoin, and argue that China's case can be seen as an example for a government that wants to maintain a high degree of financial oversight, pursuing a political agenda of extensive capital controls

and anti- capital flight measures, which has interests in containing the rise of Bitcoin as it forms a threat to all of this.

Still, this does not mean that in the type of countries where the government and the central bank play such a powerful role in the economic landscape, Bitcoin has no potential or has no chance to survive at all. Hendrickson, Hogan & Luther, (2015) argue that the attractiveness of Bitcoin in these type of countries tends to be higher as it provides a hedge against inflationary pressures caused by the central bank. Moreover, if countries have economies that are characterized by a relatively large share of informal markets, Bitcoin can become an alternative facilitator of already existent informal networks, hereby not disappearing but shifting from the formal to the informal level when regulation becomes restrictive (Hendrickson, Hogan & Luther, 2015).

These reasons might explain why Bitcoin was so attractive for the Chinese and why the relatively mild regulation from 2013 – Chinese financial institutions were not allowed to accept or use cryptocurrency or to have any connections with crypto exchanges (Böhme, et al., 2015) – in China did not work to reduce Bitcoin usage and trading (Hendrickson, Hogan & Luther, 2015). In fact, from 2013 to 2017, Bitcoin trading soared in China and the Chinese renminbi was by far the currency that was traded the most for Bitcoin, as exchanges exploited loopholes and workarounds that enabled them to still exchange the fiat for the digital currency (Kaiser, Jurado & Ledger, 2018). However, Kaiser, Jurado & Ledger, (2018) found that in late 2017, when China expanded its crypto regulation and prohibited everything crypto-related – exchanges were forced to shut down and ICO's were banned (Rapoza, 2017) – it became nearly impossible for Chinese to acquire Bitcoin, which is reflected by the less than 1% share of total Bitcoin trading that has since been conducted in Chinese yuan, suggesting that when hostile regulation is stepped up to a severe level, Bitcoin cannot escape its faith of near disappearance within that particular country. However, Chinese citizens can still obtain (new) Bitcoin by the process of mining, which is harder to ban especially because of the difficulty to enforce a crackdown on individual miners. Therefore, Bitcoin mining in China has remained dominant (Kaiser, Jurado & Ledger, 2018)

The literature that focusses on cross-analyzing legislative authorities in their way of regulating Bitcoin, makes clear that regulators around the world have mostly opted to take a permissive position with regard to the legal status of Bitcoin – 54 of the 63 countries investigated (Hendrickson, Hogan & Luther, 2015) – with some countries having decided to take a more intolerant stance, as outlined above. However, this permissive stance does not entail that there is an absence of a certain degree of suspicion when Bitcoin is being inspected. Both the EU (Houben, 2018) and the

US (MacDonald, 2019)[2], regulators are cautious, as cryptocurrencies are perceived to contain attributes that allow the facilitation of criminal activity (e.g. money laundering, tax evasion and financing of terrorists). This is despite the fact that evidence from chain analysis – an examination on the basis of the transparent ledger of crypto to track transactions – suggests that illicit transactions are very marginal within the crypto financial infrastructure, with only 0.34% of all cryptocurrency activity in 2020 being related to crime (Grauer, 2020). Still, these legislative institutions are developing regulatory frameworks to combat such activity. One example of such a framework is the EU Anti-Money Laundering Directive 5 (AMLD5), which "introduced substantial improvement to better equip the Union to prevent the financial system from being used for money laundering and for funding terrorist activities" (European Commission, 2018). One of the main amendments that are part of this directive, involves the extension of "financial rules" to entities that offer services with regard to Bitcoin and other cryptocurrencies, hereby introducing a requirement for these institutions to identify the customers and pass information about them to financial intelligence units in case of suspicious activity (Jourová, 2018).

Aside from this caution by some regulators however, recently the literature has pointed out that in some cases the permissive stance of officials has shifted to full embracement. Iran is such a state that is regulating Bitcoin and other cryptocurrency at the other side of the spectrum in comparison to China, as the blockchain technology has given them the opportunity to evade US banking sanctions hindering foreign enterprises from doing business with Iran (The New York Times, 2019). The Iranian government has therefore had an major interest in promoting cryptocurrency networks to support a form of international trading that bypasses the traditional US-dominated traditional banking system, which is for example reflected in their endorsement for a cooperation program with Russia to develop Iran's blockchain industry further (Ratna, 2020). This kind of regulatory behavior is described by Konowicz, (2018) as an actual strategy of encouraging "a sanctioned state's population and business community to utilize all digital currencies freely". He argues that while normally Bitcoin and other crypto are perceived disadvantageous because of the lack of central bank backing, in situations of intensive dollar-based sanctioning, the latter is actually considered advantageous. As both the Iranian government and the Iranian citizens use Bitcoin as it is seen as the only viable way to transfer money out of the country (Ratna, 2020), hereby actively embracing Bitcoin, Iran is a rather unique case in this regard.

[2] In a hearing for the House Financial Services Committee in 2018, Chairman of the US Federal Reserve, Jerome Powell, stated that "cryptocurrencies are great if you're trying to hide or launder money, we have to be very conscious of that".

2.2 Bitcoin as alternative form of money to fiat currencies

Perhaps the most vast and popular research field when examining Bitcoin, is related to the determination of its value. Determining the value of Bitcoin can be done on the basis of a whole spectrum of disciplines (e.g. socially, economically, technologically, etc.), though perhaps the most major way to assess it stems from the "coin" part inherent to the term Bitcoin itself, which implies that Bitcoin is some form of money, making it suitable to analyze monetarily. Furthermore, the monetary value of Bitcoin can be conveniently estimated and modeled by comparing it to the value of the money people are using right now; fiat currencies.

The existing literature provides different viewpoints on if Bitcoin can be an useful alternative to existing fiat currencies, aside from whether regulation will allow it to be. From one perspective, Bitcoin is considered with great suspicion when the latter is evaluated (Cermak, 2017; Yermack, 2015; Glaser, et al., 2014; Kostakis & Giotitsas, 2014; Hanley, 2013; Elwell, et al., 2013). Many scholars (e.g. Cermak, 2017; Yermack, 2015; Lo & Wang, 2014) have evaluated to what extent Bitcoin has met the three fundamental principles commonly accepted within the economics discipline, that are required to become a legitimate monetary option. These three essential attributes consist of; a medium of exchange, a unit of account, and a store of value. All of which are argued to be insufficiently met by Bitcoin and therefore it is considered not an useful monetary alternative to fiat currencies (Cermak, 2017; Yermack, 2015; Lo & Wang, 2014). Furthermore, there is also argued that the relatively high day-to-day volatility of Bitcoin's price undermines the idea that Bitcoin could offer useful monetary implications (Glaser, et al., 2014). A main reason for this, is that it makes Bitcoin highly unusable as a unit of account, due to the difficulty that arises for sellers to change their prices to keep up with this volatility (Yermack, 2015). Additionally, it makes Bitcoin a questionable store of value (Yermack, 2005), which will be elaborated in section 2.3.

Additionally, critics argue that Bitcoin is too inflexible (e.g. no option to execute monetary policy on Bitcoin) and draw comparisons to the period of the gold-standard, which in their perspective was also subject to a too rigid international financial structure because of the lack of options to provide financial stimuluses to the economy in financially instable times (Dodd, 2018) – the money supply could only grow if the gold supply also rose, since the value of the currency was tied to gold. Furthermore, there is argued that the deflationary nature of Bitcoin is especially problematic for it to provide a viable monetary alternative to fiat currencies (Kostakis & Giotitsas, 2014; Hanley, 2013; Elwell, et al., 2013). The inflexible and deflationary nature stems from the protocol of Bitcoin, ensuring that the flow of additional coins halves roughly every 4 years during an event most commonly known as the "halving". Because of this, the protocol ultimately predetermines a fixed amount of 21 million Bitcoin ever to be minted. A deflationary currency incentivizes buyers to hold the currency while sellers want to sell as quickly as possible in order to

maximize value (Kostakis & Giotitsas, 2014), which will drive growth stagnation and higher unemployment (Elwell, et al., 2013).

However, a contrasting view argues that Bitcoin actually can be a very useful monetary alternative to traditional currencies, though under specific circumstances. From this viewpoint, some of the drawbacks of Bitcoin as considered by the previous scholars, are actually seen as advantages in particular contexts. This is for example the case with the deflationary nature and inflexibility of Bitcoin inherent to its fixed supply. The fixed supply is actually a deliberate and fundamental part of Bitcoin's protocol, which is incorporated due to the reason that it makes Bitcoin "completely inflation free" (Nakamoto, 2012) and unrestrained from government interference (Ciaian & Rajcaniova, 2016). This is actually seen as a main advantage of Bitcoin by several scholars (Ciaian & Rajcaniova, 2016; Clegg, 2014; Krause, 2016) and there is argued that this advantage is mainly based on the store of value function of Bitcoin, which especially applies in developing countries[3] (Clegg, 2014; Krause, 2016). Additionally, there is argued that if Bitcoin was used as a primary currency, the transparency that stems from Bitcoin's decentralized infrastructure enables citizens to hold governments accountable for their appropriation of funds, hereby discouraging unjustified transfers and, in line of that, corruption (Nicholson, 2017).

2.4 Bitcoin and the Austrian school of economics

The Austrian school of economics offers a contributive perspective on money when evaluating Bitcoin's monetary potential in certain situations. The link between Bitcoin and the Austrian school is not a farfetched one, given the fact that even large institutions make this connection. For example, the European Central Bank (ECB) published a paper mentioning that: "The theoretical roots of Bitcoin can be found in the Austrian school of economics and its criticism of the current fiat money system coupled with interventions undertaken by governments and other agencies, which, in their view, result in exacerbated business cycles and massive inflation" (ECB, 2012). This criticism is indeed existent, as the Austrian school of economics, with leading figures like Milton Friedman and Friedrich Hayek, can be seen as very critical on the state's monopoly on money supply (Friedman 1971; Hayek, 1976[4]). Hayek, (1976) argues that this is a dangerous monopoly, as the state can force people to use and accept this money at any particular price, giving rise to inflation. The state has the desire to use this monopoly for its own interests, to enhance their coercive powers, rather than to manage this money for the benefit of the people it governs.

In essence, the Austrian school of economics could be seen as an alternative economic

[3] This will be elaborated in section 2.3

[4] When referred to Hayek, (1976) there are two works on which the reference is based (see bibliography).

paradigm that opposes many of the ideas from Keynesian economics, which originated from John Maynard Keynes in the 1930's in order to better understand the Great Depression and prevent future economic collapses (Jahan, Mahmud & Papageorgiou, 2014). This latter economic school is largely endorsed by central banks globally to justify the pursuit of monetary policy and the setting of interest rates (Cermak, 2017). Central to Keynesian economic thought, is that fluctuations in aggregate demand can induce decreased production paired with higher levels of unemployment, meaning that demand will even fall further as less people have wages to spend. To limit this effect, monetary policy is implemented, for example by setting interest rates artificially lower so that natural decreases in demand are offset and drops in total spending are minimized (Cermak, 2017). Contrastingly, the Austrian school argues that such manipulation only works for the short-term, as producers are falsely incentivized to do business investments that are not based on the natural intersection between supply and demand, which results in overconsumption and an economic boom that is always followed by a crisis (Cermak, 2017).

The pioneer of the Austrian school of economics, Ludwig von Mises, developed a monetary premise termed "the regression theorem", which maintains that people will only adopt a new means of exchange when they are certain that it is has value and that it is exchangeable. The evaluation of its value depends on if it represents some kind of worth besides the means of exchange aspect. In this sense, it should be a commodity in the first place. Hence, "paper money, especially that with no commodity backing, is only adopted when governments force it upon people" (von Mises, 2009[5]). Given the regression theorem and the undesired state's monopoly on money, generally the Austrian school of economics has long been proponent of the gold standard. This forms a solution that satisfies the regression theorem, and simultaneously prevents politicians from being able to rapidly pursue monetary expansion for short term gain, hereby accelerating inflation (Milne, 2017). Hayek, (1976) also believes that the gold standard is the only viable and safe system "so long as the management is in the hands of government". However, he argues that the solution could be even better when completely moving away from this governments' control over money, hereby "protecting money from politics" (Hayek, 1976). Thus, Hayek, (1976) proposes the idea of competing currencies, in which private entities can issue currencies that are directly brought into competition with other currencies. The main advantage of these private competing currencies lays within the fact that the private institutions issuing the currencies, have the sole and exclusive concern of aligning their money with the interests of the public (Hayek, 1976).

Clegg, (2014) in extension of Hayek's argument for private issued currencies, argues that

[5] This is a 2009 republication. Original version: Mises, L. V. (1912). The theory of money and credit, Indianapolis, IN: Liberty Fund.

Bitcoin provides an even better solution from the Austrian perspective. He stresses that, although competing currencies would be less likely to be subject to central manipulation than the situation in which the government controls the money supply, private institutions can still manipulate the currencies to a degree. Additionally, he draws on the argument of Rothbard, (1974) who states that governments would never allow private institutions like banks to introduce their own currencies, hereby limiting their monetary control. Therefore, there is argued that with the technological innovation of Bitcoin, there has now emerged a financial infrastructure that completely solves the problem of centralized manipulability – which has been the main concern for the Austrian school of economics – while also being more difficult to prohibit for governments. Furthermore, why Bitcoin suits the Austrian perspective is also summarized by Cermak (2017), who states that Bitcoin not only disrupts the state's monopoly on money and has the potential to weaken the power of central banks, but it also ensures certainty within the money supply in contrast to a financial system where central banks are unpredictably manipulating the currency.

Still, there could also be identified a divide in the support for Bitcoin as a monetary alternative within the Austrian school of economics, which is situated around the debate about the regression theorem. Economists that hold a literal interpretation of this argument, argue that Bitcoin is violating it, since it represents no intrinsic value – it is no commodity nor is it backed by one (Shostak, 2013; Korda, 2013). Though on the other side of the spectrum, those that relax the assumptions of the regression theorem, argue that Bitcoin still satisfies its main requirement since it is an intangible good that represents a similar value to a commodity, based on its inherent scarcity. In this sense, it does not have to be of material value, as long as it is a scarce good (Graf, 2013).

2.3 Bitcoin as a store of value

The view that argues that Bitcoin can indeed play an useful role in certain circumstances, mainly bases their argument on its store of value function, which is especially applicable in countries dealing with high inflation. A 'store of value', defined by Investopedia and Wikipedia as "an asset that maintains its value without depreciating" (Investopedia, 2020) and "anything that retains purchasing power in the future" (Wikipedia, 2020) respectively, is in classical economics generally seen as one of the three primary functions of money (Lo & Wang, 2014).

Opponents of seeing Bitcoin as a store of value, like Yermack, (2015) and Kubát, (2015) argue that the high exchange rate volatility in Bitcoin's price undermine this function. There is argued that this volatility leads to a degree of risk in Bitcoin investment that is significantly higher than gold and fiat currencies – already established stores of value. Furthermore, stocks, and even high risk stocks, do generally not exhibit volatility statistics like Bitcoin does (Yermack, 2015). Therefore, there is

concluded that the high risk of holding Bitcoin and the uncertainty whether it will keep its value, makes this currency incompatible with the function of storing value (Yermack, 2015; Kubát, 2015). Furthermore, Lo & Wang, (2014) stress that Bitcoin's role of acting like a store of value is almost entirely dependent on speculation, as in comparison to gold, which has a high intrinsic value, and in comparison to fiat, which has central bank endorsement, Bitcoin's value hinges completely on the anticipation of future willingness to accept the digital currency at higher prices. However, despite being reliant on speculation, Van Alstyne, (2014) argues that this does not mean that Bitcoin cannot be perceived as a store of value psychologically, as people that hoard Bitcoin expecting future price rises, are ultimately believing that they are safeguarding value. Besides, other scholars reject the argument that Bitcoin's store of value function is purely based on speculation, and state that instead it is closely related to the digital scarcity inherent to Bitcoin's protocol (Graf, 2013; PlanB, 2019).

Another argument against Bitcoin as a store of value, is provided by Yermack, (2015) and Edwards (2013) who are not convinced by Bitcoin's security and state that storing value also means to protect the asset or form of money from theft. There is stressed that supposedly secure 'digital wallets' in which Bitcoin can be stored and saved, are often compromised and therefore not suitable for storing large amounts of value. However, assessing the security aspect of storing Bitcoin is very complex, since there are a myriad of options for generating the private keys – with which one can access the BTC in the wallet – and in which way they are stored and encrypted. In this sense, due to the intricacy, security on the blockchain and the storage of crypto has also become a prominent research area that has been explored by scholars like Conti et al., (2018) and Zaghloul, Mutka & Ren, (2020). A main point that can be derived from these research projects, is that seeing Bitcoin as insecure is too short-sighted, as essentially it is up to the user how safe he or she is wants to be when locking away the Bitcoin, given the multitude of available options. Importantly, Zaghloul, Mutka & Ren, (2020) state that there is often a tradeoff between security and convenience, meaning that in many cases users will give up some ease of use regarding the management of coins when they opt for more secure wallet storage alternatives. This can be illustrated by for example the so-called "hardware wallets", which are considered one of the most secure ways to safe Bitcoin as these devices holding the Bitcoin are not directly connected to the holder's network, hereby greatly reducing the chances of potential network vulnerabilities that allow for hacks aimed to steal the Bitcoin (Conti et al., 2018). On the other hand, these type of wallets are less convenient in the sense that frequent payments are made more of a hassle given the requirement of always physically having to bring the hardware wallet in order to conduct the transactions (Zaghloul, Mutka & Ren, 2020).

Proponents of seeing Bitcoin as a store of value, recognize the volatility but emphasize the fact that the currency is still very novel, with volatility gradually reducing as the technology receives wider acceptance (Van Alstyne, 2014; Krause, 2016). In an article on Forbes, Huang, (2020) describes

Bitcoin's controlled and limited money supply as the main reason for its value: "Bitcoin is structured technologically to encourage a deflationary attitude and a relatively stable store of value that partially harkens back to the "gold standard"". In this sense, he compares Bitcoin to gold and emphasizes that the value of Bitcoin lays within its function as a hedge against inflation, particularly against the economics and politics that drive this inflation. The comparison to gold has also been made by a lot of other scholars (Baur, Hong & Lee, 2018; Hwang, 2019; Klein, Thu, & Walther, 2018; Shahzad, et al., 2019). These comparisons are easily made as Bitcoin and gold share many characteristics, like both having non-political attributes, being impossible to control by central authorities and are instead of creating cash-flows dependent on the process of 'mining' for their supply (Shahzad, et al., 2019). In a similar vein, Baur, Hong & Lee, (2018) argue that Bitcoin has the unique attribute of not being an integrated pion in the established international financial system, giving support for the argument that it can act as a store of value over the long-term, as it provides, just as gold, a hedge against financial turmoil and possible future collapses of this financial system. However, there is found by multiple scholars that so far, the Bitcoin price has not been completely uncorrelated to shocks in the financial system, indicating that the latter argument for Bitcoin as a hedge against the fragility of this international monetary structure is not yet empirically supported (Baur, Hong & Lee, 2018; Klein, Thu, & Walther, 2018).

Still, the argument for Bitcoin playing the role as a store of value that hedges against politically induced inflation (Huang, 2020), has been championed by other scholars as well, particularly in the context of developing countries. Krause, (2016) argues that in many developing economies, the state behaves predatory, extracting financial resources from the citizens. These extractive institutions are revealed by the fragile banking infrastructure, risky fund transfers and highly inflated currencies where citizens in these countries have to deal with (Clegg, 2014; Krause, 2016). Although Krause, (2016) recognizes the problem of volatility regarding the Bitcoin exchange rate, there is also argued that this volatility might be less problematic than rampant inflation. In this sense, Bitcoin can in these developing countries be a realistic means to store value, as on the long-term the Bitcoin price has only shown signs of appreciation. Furthermore, there is argued that when more people begin to use Bitcoin as a store of value, there can be imagined that more sellers will accept Bitcoin as a payment, hereby also strengthening Bitcoin's position as a means of exchange (Krause, 2016).

However, both Krause (2016) and Clegg (2014) stress that the low rate of internet penetration in developing countries proposes a substantial barrier to Bitcoin adoption and therefore also for playing its role as a store of value.

2.5 Bitcoin as a vehicle currency

Despite generally been considered an invaluable means of exchange, as total market acceptance for Bitcoin remains low in the sense that there are still few merchants that accept crypto purchases[6] (Yermack 2015), Bitcoin is by several scholars seen as a valuable means of exchange in one specific way – a vehicle currency. The vehicle currency role for Bitcoin has been described by scholars like Saito, (2019) as yielding benefits in terms of minimizing foreign exchange costs when this digital currency is used in international transactions. While his view considers cost advantages from a perspective wherein Bitcoin would be the global primary currency so that traditional foreign exchange costs are made obsolete, the view of Bitcoin as a cost-saving vehicle currency is also supported by Kim (2017) who finds empirical evidence for the claim that Bitcoin exchanges provide a cheaper alternative to traditional foreign exchange markets. In other words, he finds that even in the current financial system, exchanging one currency for another with Bitcoin as the intermediary yields significant cost advantages, as bid-ask spreads on Bitcoin exchanges are generally lower. This finding is not supported by Pieters, (2017) however, who finds that Bitcoin facilitated currency exchanges generally incur similar costs to traditional foreign exchange channels.

More recently however, the vehicle currency aspect of Bitcoin has been highlighted not because of marginal cost advantages, but because it offers a way to facilitate currency exchanges and to transfer value outside of the country, in situations where this could not be achieved through traditional channels. Chiu, Hung & Liang, (2020) have investigated the flow of funds during the outbreak of Covid-19 in Wuhan, and find evidence suggesting that Bitcoin was used as an intermediary to transfer Chinese capital to US markets in a period of extreme uncertainty[7]. Chinese capital decided to do this, as China's closed economic context and capital control measures prevented more traditional value transfers, which are either blocked or easily intercepted. The authors conclude that Bitcoin could become an important alternative way to transfer capital – as a mediator – especially in times of an emergency.

Comparably, Ahlborg, (2020) finds that Bitcoin's vehicle role applies in Venezuela, where unhealthy monetary policies and artificially set exchange rates have hindered Venezuelans from obtaining the stable currencies like US dollars that have long been used as a more reliable means of exchange than the severely inflated bolivar. Bitcoin is therefore needed as a vehicle currency as tight capital controls exhausted the ability of citizens to acquire stable currencies via a more straightforward way that would be commonplace under free market conditions (Ahlborg, 2020). In

[6] Coinmap.org data reveals that despite a positive trend, the amount of venues accepting Bitcoin globally is only 19.407.

[7] Although Chiu, Hung & Liang, (2020) do not specify how Chinese capital had access to Bitcoin, it is likely that they are obtained via mining or via foreign unregulated markets, since domestic Bitcoin trading is prohibited.

this sense, Bitcoin is the vehicle with which stable currencies are obtained in a way that circumvents the extensive capital exchange controls, as platforms like LocalBitcoins – a peer to peer Bitcoin trading platform – are not prohibited or heavily regulated like local banks. The Bitcoin facilitated exchange of currencies can occur in multiple ways, but the most simple way involves two peer to peer transactions wherein the first contains a transaction with bolivar for Bitcoin, while the second one involves a trade with this Bitcoin for (for example) US dollars. Furthermore, it also plays the vehicle role for migrants that desire to send value from their host countries to Venezuela, with Bitcoin mediating in a similar but reversed manner as just described (Ahlborg, 2020).

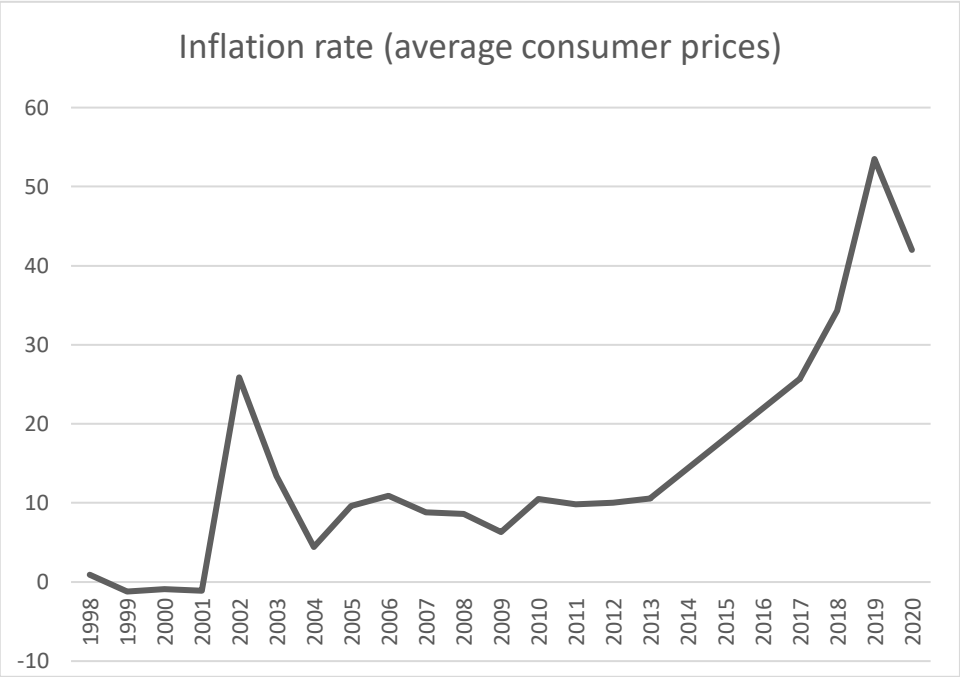
Similar narratives on vehicle currency purposes of Bitcoin have also been made in the Argentinian context (Pieters, 2017; Sinha, 2019), as will be elaborated in the next section.

The Argentinian case and theoretical gap

3.1 Bitcoin and Argentina

Argentina[8] is an interesting case for the research question as it falls in the realm of countries in which the previously mentioned literature imagines that Bitcoin is appealing; it is dealing with significant inflation rates following from economic mismanagement by the government, it enjoys relatively high rates of internet penetration, and it is characterized by having a considerable black market economy (Cifuentes, 2019; Krause, 2016). There is already established a body of literature on developments with regard to Bitcoin usage by Argentinians. Most of this current literature focusses on how the specific political and economic situation in the country has paved the way for Bitcoin adoption (Cifuentes, 2019; Krause, 2016; Moreno, 2016). In general, the literature suggests that the turn to Bitcoin reflects a way of economic survival rather than a desire (Cifuentes, 2019; Moreno, 2016). Graph 1 shows Argentina's inflation rates of the last twenty years.

Graph 1: Inflation based on CPI for Argentina (IMF, 2021[9]).



Moreno, (2016) stresses that "every day people" who are not tech or financially savvy, use Bitcoin not because it is a cool novelty, but because it forms the solution to a serious problem. This problem involves the substantial inflation with regard to the Argentinian peso, which is a consequence of inadequately managed macroeconomic policies that have led and continue to lead

[8] For a broad overview about Argentina's (historic) economy, another section has been devoted to this and is included within the appendix.
[9] IMF, 2021. Source: World Economic Outlook (April 2021).

to severe losses of savings for the Argentinian citizens. A way of escaping the substantial value losses of the peso, has been the acquittance of the US dollar, which because of its stability performed the role of a store of value. However, under President Kirchner's administration, in 2011, the "General Resolution 3210/11" was introduced, in which capital controls were substantially tightened up to the point that converting pesos to dollars was "virtually impossible for the average Argentinian citizen" (Moreno, 2016). Because hard currencies have been inaccessible for Argentinians to obtain via formal ways, following from the overregulated and closed economic context of the country, an extensive black market for US dollars emerged (Cifuentes, 2019; Krause, 2016; Pieters, 2017). The desire for these stable US dollars is reflected by its price within the black market, which at some point easily was double the amount of pesos compared with official exchange markets (Business Insider, 2013). This informal dollar market has even be expressed with a distinguished name – Dólar Blue (Blue dollar) – and often Blue dollar exchange rates were listed alongside the official ones in newspapers (Pieters, 2017). Facilitators for this Blue dollar system have been the so-called "cuevas" (Spanish for caves), which can be seen as the "informal money transmitters" that are often hidden in concealed places, and where hard earned pesos could be exchanged for the US dollar against the Blue dollar exchange rate (Ahlborg, 2020). Despite being illegal, these cuevas have managed to sustain themselves because corruption has been hampering the enforcement of cracking down these networks (Ahlborg, 2020).

Cifuentes, (2019) suggests that it is a combination of factors that give reason to the turn to Bitcoin of Argentinians, including the inflation of the peso, the inability to store value by converting peso's to US dollars via official channels, and the distrust in general that Argentinians have in their own governmental and financial institutions (Cifuentes, 2019). In this sense, Bitcoin could serve two purposes; First to store and safe value for the long term without being hampered by inflation (Cifuentes, 2019; Moreno, 2016; Krause, 2016), and second, to play a facilitating role in informal or unregulated markets (as imagined by Hendrickson, Hogan & Luther, (2015)) by enabling Argentinians to conveniently purchase and sell hard currencies, like US dollars, for this digital currency (Cointelegraph, 2019). The latter role wherein Bitcoin is used as a vehicle, is also supported by the finding of Pieters, (2017) who identifies that in the periods of heavy capital control restrictions, the Bitcoin-aided exchange rates were mirroring the black market exchange rates instead of the official ones, suggesting that "the bitcoin market was used as a channel to circumvent restrictions on currency trades". Furthermore, while Ahlborg's (2020) argument for Bitcoin being a vehicle currency primarily considered Venezuela, he does state that: "Bitcoin is primarily being used as a vehicle currency across Latin America", indicating that this would also be the case for Argentina, which makes additional sense given the roughly similar economic characteristics of the two countries (e.g. severe inflation) (Cifuentes, 2019). However, in a second article of Ahlborg (2020) that focusses on

the Argentinian situation with regard to Bitcoin, there is argued that the vehicle currency role is not so necessary in Argentina in comparison to Venezuela, considering the existence of well-established cuevas that already serve the purpose of unrestricted currency trading. Still, Ahlborg (2020) also identified, through interviews, that these cuevas are gradually incorporating Bitcoin within their exchange activity, especially since it aids in facilitating cross-border value transfers. In this sense, there is stated that Bitcoin is indeed being exploited within the informal networks as a vehicle currency, although it is not clear on which scale this is happening, and how it relates to the store of value role.

Considering the regulation surrounding Bitcoin in Argentina; Argentinian legislators appear to be approaching Bitcoin with caution and ambiguity, not recognizing or institutionalizing it as legal tender, but not prohibiting its usage or online trading either (Cifuentes, 2019). Legal experts in Argentina have viewed Bitcoin as broadly being regulated as an 'asset' under 'Argentina's Civil and Commercial Code', which endorses assets and goods as legitimate stores of value and means of exchange in the case that the citizens accept them as such, despite not being officially and legally backed (Chomczyc, 2015). In spite of capital control relaxations with the beginning of the newly formed Macri administration in 2015, in October 2019 the Central bank of Argentina has introduced several measures that tightened these controls again, as a response to the currency crisis and the rapid drainage of foreign reserves (Bloomberg, 2019). Among the restrictive exchange measures, a ban of acquiring Bitcoin via credit cards was included (Martin, 2019), signaling that the Argentinian government at least finds Bitcoin somewhat threatening in the regard of facilitating currency exchanges and, therewith, capital flight. The latter is also stated in an article on Cointelegraph, where there is argued that this policy is aimed to defend the peso at the cost of crypto, as there is suspected that Argentinians exchange crypto back into US dollars either locally or offshore, hence, using Bitcoin as a vehicle to evade capital controls and flee into other currencies (Sinha, 2019).

Still, these restrictions aimed at limiting the obtainment of Bitcoin are overshadowed by the more traditional foreign exchange controls which are as of September 15 2020 additionally constricted under the Fernández administration which has been in place since late 2019. Within this period the Central bank of Argentina announced that a tax of 35% will have to be paid by every Argentinian citizen that is conducting a debit or credit card transaction in foreign currency, while also disclosing that Argentinians are still being limited to a maximum of 200 US dollars that can be purchased each month via official channels, a measure that was already in place since the October 2019 regulation (BCRA, 2020). However, when considering the latter, this 200 US dollar quota has now been expanded to also include card payments in foreign currency (e.g. US dollars), meaning that in essence Argentinians are unable to exceed the 200 US dollar limit either by exchanging pesos for dollars and/or by conducting card transactions in dollar (BCRA, 2020).

3.2 Theoretical gap

Thus, the existing literature (e.g. Cifuentes, 2019; Clegg, 2015; Moreno, 2016) has already provided useful insights on why developing countries, and Argentina in particular, can become breeding grounds for the usage of Bitcoin. However, this literature has not focused on generating evidence that empirically shows that Bitcoin indeed is being used as a way to circumvent inflated currencies. In other words, while there is described and examined *why* Bitcoin could be useful in developing countries and why it is on the rise in Argentina, the rise itself is often just assumed, or at least lacking empirical grounding. Therefore, the analysis in this research will form a contribution to the existing theory by firstly empirically validating if there is an actual connection between inflation and the amount of Bitcoin usage across countries, and if this relationship exists within Argentina in particular.

Only Krause, (2016) analyzed a research question with similar aims, as he has used regression analysis to investigate if inflation was significantly affecting the amount of Bitcoin usage across different countries. While this analysis has produced findings showing that this effect has indeed been significant, it contained statistics from 2015, when Bitcoin was less technologically developed, had a much lower market capitalization and generally played a smaller role worldwide. Furthermore, by only considering *if* inflation drives Bitcoin adoption, the research did not account for nuances in how Bitcoin was used to counter inflation (e.g. by acting as a store of value or by facilitating trades for hard currencies like the stable dollar). In this sense, this thesis will offer a different angle, as it seeks to provide more understanding about the claim that Argentinians are turning to Bitcoin, in their search of dealing with severe inflation, by also including a qualitative methodology that will incorporate the important distinction in *how* Bitcoin is being used. The aim of this thesis is to weigh both the roles against each other and to explore whether one of the two is more predominant within the Argentinian context. The latter is relevant to learn since it influences the implications for various actors.

Concludingly, this thesis offers a theoretical contribution as it can furtherly legitimize (or delegitimize) previous work arguing that Bitcoin could be useful monetarily in certain situations, while also validating the two theories that seek to explain in what way this digital currency aids citizens in covering themselves from inflation.

Research Design

4.1 Triangulation

In this thesis, data will be collected from various sources. Furthermore, the thesis will also apply a mixed research methodology, including elements from qualitative as well as quantitative research. By doing this, there is aimed to triangulate the data sources and methods. Triangulation is useful to cross-check findings that are inferred from both the qualitative as the quantitative research (Deacon, Bryman & Fenton, 1998). Besides using triangulation to achieve trustworthiness and rigor in a research project, the depth of the study is enhanced as quantitative findings are expanded with qualitative insights that broaden the understanding of the case studied (Bryman, 2012).

4.2 Cross-country hypothesis, data collection and analysis

4.2.1 Hypothesis

First of all, as the literature suggests that citizens are turning to Bitcoin in order to escape severe inflation, there will be examined, on quantitative basis, if there actually exists a significant positive relationship between the inflation rate and the extent of Bitcoin usage across countries. In this sense, the following hypothesis[10] is tested and expected to be accepted:

H1. Bitcoin usage is significantly affected by inflation.

4.2.2 Data collection

To measure the relationship reflected in the hypothesis, there first of all needs to be obtained data of Bitcoin usage. This is difficult to acquire, since there is no data available about the total amount of Bitcoins being traded in each country, as many of the Bitcoins are being exchanged via methods and platforms that are not transparent for the public (Alford, 2018). The website www.coin.dance provides historical data per country on the volume of Bitcoins being traded via LocalBitcoins each week. Although this trading data only involves one peer to peer platform so there must be admitted that it only covers a small fraction of total exchange volume (Alford, 2018), there is still enough data that can provide a sufficient indication about the amount of Bitcoin exchanges per country and the differences in exchange volume across these countries. In total, on www.coin.dance there is data available for 46 countries. Hence, further data collection and analysis is executed exactly for these 46 countries. All the data that will be collected reflects the year 2019.

[10] The hypothesis of the quantitative study is preceding the case study, where propositions instead of hypotheses are formulated

Data also needs to be harvested for the other main variable that is being investigated as part of the quantitative analysis – inflation. The World Bank website has data regarding the inflation rate statistics publicly available and easily downloadable. This data contains the annual change in consumer prices in 2019 in comparison to that of a year before, reflected in the CPI. The CPI comprehends a price assessment of a basket of products and services commonly bought and assessing the way it changes over year is a general metric used for measuring the amount of inflation (or deflation) in a particular country or group of countries (Investopedia, 2020). In other words, it is used to measure "the change in the prices of a basket of goods and services that are typically purchased by specific groups of households" (OECD, 2020).

Additionally, the World Bank databank is also being used to download data for certain control variables that can later be included within the analysis. For all the 46 countries, besides inflation rates, also the population, GDP in constant 2010$ and internet penetration rate[11] statistics were retrieved from World Bank. The large, complete dataset is included within the appendix.

4.2.3 Data analysis

After collecting the data, there will be made use of a statistical research method; 'bivariate analysis', which enables the researcher to identify the relationship between two variables (Bryman, 2012). Hence, in this case the relationship between the inflation rate and Bitcoin exchange volume will be examined. To identify this relationship, a simple linear regression in a similar fashion as that of Krause will be employed, in which the inflation growth rate is seen as the independent variable that could 'predict' the amount of Bitcoin being traded on LocalBitcoins – the "Bitcoin usage" variable. Furthermore, this analysis will expand on the work of Krause, (2016) as it incorporates more recent data while also including more countries – units of analysis – to enhance the reliability of the results. Through regression analysis, the determinantal impact of the independent variable on the dependent variable is examined (Grove & Friens, 2006). As H1 already embodies, there is suspected that the inflation rate (measured in CPI) will have a significant and positive impact on Bitcoin usage over the 46 countries investigated.

Several preliminary analyses are also conducted to check whether the data collected is indeed satisfying the assumptions to perform a linear regression. In this sense, there is for instance checked by a scatterplot if the data is meeting the assumption of linearity, which is required for the achievement of reliable results (Grover & Friens 2006). The analyses are being conducted using the

[11] Some data was missing from World bank, which is why alternative sources were consulted to obtain a complete dataset. World Bank did not have any data on internet penetration for Argentina, Australia, Brazil, Canada, Chile, Dominican Republic, Eurozone, India, Iran, Japan, New Zealand, Nigeria, South Africa, Ukraine, US, Venezuela and Vietnam, so the missing rates were collected from the website internetworldstats.com. Additionally, the inflation rates from Kenya and Egypt were retrieved from the Kenyan and Egyptian central bank's website, while Iran's GDP was retrieved from the IMF database.

statistical software application of SPSS. It is also worth noting that no additional software extensions or tools for SPSS have to be acquired, as the standard version already contains the analysis tools required for the particular examination of this thesis.

4.3 Case study: data collection, measures and analysis

4.3.1 Case study

After having established an understanding about the overall connection between inflation and Bitcoin usage globally, the second part of the mixed methodology encompasses a single case study, where Bitcoin usage of Argentinians is the primary unit of analysis. The choice for a case study as a research method is useful when seeking "to understand complex social phenomena" (Yin, 2003). Furthermore, the case study will be primarily of 'intrinsic' nature, because the case's substantial distinctiveness and particularity make the case is interesting in its own right, instead of being instrumental for other cases (Baxter & Jack, 2008; Stake, 1995). Argentina is an unique case because of certain factors described earlier (e.g. troubled economic history, severe inflation, high internet penetration, strict capital controls & lack of regulatory ban). It's the combination of all these factors together that make Argentina an interesting case to look at when attempting to find out what kind of role's Bitcoin can play for citizens.

This does not mean that looking at this particular case can't have interesting implications for other countries, particularly financially instable ones. Being an intrinsic case also does not necessarily have to signify that this case can't represent other cases, however it does mean that the case is not of secondary importance, as is often true for instrumental cases (Baxter & Jack, 2008).

Baxter & Jack, (2008) emphasize the importance of creating propositions within a case study, so that the scope will remain limited and the feasibility of the project is safeguarded. Additionally, adding propositions to substantiate the research question can enhance the validity and credibility of the study (Baxter & Jack, 2008). Therefore, the first proposition is based on the literature that indicated that in the context of high inflation within domestic currencies, Bitcoin's attractiveness rises. Hence, higher levels of attraction will induce Bitcoin usage. To verify this relation there is constructed a proposition similar to H1 in this thesis, but now specifically focusing on the Argentinian context that is considered in the case study. In other words, with the first proposition there is investigated whether hypothesis 1 will also hold for the Argentinian case, therefore checking whether Argentina can be seen as instrumental for a case where higher inflation rates drive Bitcoin usage. Additionally, it is worth noting that P1 does not encompass inflation rates (through the CPI) to measure inflation, but instead includes a measure of *perceived inflation*. It is formulated as the following:

P1. Argentinian Bitcoin usage is significantly affected by perceived inflation.

The next two propositions are researched qualitatively, focus on Argentinians as an intrinsic case, and are building further on the literature considering Bitcoin's role in specific contexts. Proposition 2 is therefore based on the theory that considers Bitcoin's significant store of value function in both the cases of developing countries (Krause, 2016; Clegg, 2014) and Argentina specifically (Cifuentes, 2019; Moreno, 2016). Hence, it is formulated as:

P2. Bitcoin is used by Argentinians to circumvent the highly inflated peso by acting as a store of value.

Lastly, the final proposition is based on the work of among others, Ahlborg, (2020) and Pieters, (2017) who suggest that Bitcoin can play the role of a vehicle currency in specific circumstances, and is formulated as:

P3. Bitcoin is used by Argentinians to circumvent the highly inflated peso by acting as a vehicle currency.

4.3.2 Data collection

The case study is aimed to both establish the exact relationship between perceived inflation and Bitcoin usage within the Argentinian context (through quantitative means), and to deepen the understanding about this relationship by qualitatively researching how this relationship can be explained, considering in what way Bitcoin is being used to circumvent inflation. The data that will be collected to do both forms of research, will be retrieved from a sample of Argentinian Bitcoin users that are members of the Argentinian Bitcoin Facebook community group.

Created in April 2013 and with a current member base of 50.494, the Argentinian Bitcoin Facebook group – "*Bitcoin Argentina*" – features a lot of activity from Argentinian people that are at the very least somewhat interested in Bitcoin. The Facebook group is described by the moderators as: "Grupo de Bitcoin más numeroso en español" (largest Bitcoin group in Spanish) and it contains posts ranging from discussions on price developments to questions about the underlying blockchain technology. For this study, data is not collected from the Facebook group directly – instead the group is used as a recruitment tool. That is, Facebook serves the role of gathering relevant participants for a survey, with such a way of using Facebook to recruit people for a research project being termed as 'research self-identification' by Franz, et al., (2019).

In this sense, a sample is drawn from this particular Facebook group by spreading a questionnaire within this group in an attempt to produce indicative findings that are consistent with the whole Argentinian Bitcoin-using population. This questionnaire was included within a post created by the researcher and was accessible for all group members. A survey-based research design involving a sample enables the researcher to approximate reliable findings for the whole population

being considered, but at a much lower cost than including this total population within the research process (Saunders, 2009). Furthermore, the distribution of the survey within this Facebook group is a form of non-probability sampling, which bypasses the often infeasible need to let the whole population get an even chance of participation within the study (Bryman & Bell, 2015). However, there must be noted that the phenomenon of 'sampling bias' (Bryman, 2012) can influence the extent of representativeness of the results. In this case sampling bias is likely to occur because not all *Bitcoin Argentina* members have an exact even chance to participate, as some will see the post containing the survey and some will not. It can therefore be the case that more active and frequent Facebook users are overrepresented in the research, which can affect the results significantly. Furthermore, Argentinian Bitcoin users that are not a *Bitcoin Argentina* member or a Facebook member at all, are also being excluded from the study as they do not have any possibility of participating in the survey used for this thesis. It is therefore crucial to underline that the sample that is drawn in this thesis limits the extent to which the findings can be generalized. As Bryman, (2012) stresses, a sample can only generate reliable results for the specific population from which the sample is taken. In this case, it is therefore important to not fully generalize the findings for the whole Argentinian Bitcoin-using population, as the study has only been applicable for users of *Bitcoin Argentina.*

The survey has been selected as the most appropriate data collection tool as it enables the researcher to assess certain relationships between constructs (Saunders, 2009), while also being relatively fast, versatile, accurate and not costly way to harvest the data (Grover & Friens, 2006). The online application 'Qualtrics' has been used to create, distribute and manage the survey. Following the guidelines of Bryman & Bell, (2015) at the start of the survey the respondents were shortly introduced with the content of the study as well as provided with clear and general instructions. Additionally, there is stressed here that the survey can be completed totally anonymously, to both ensure compliance with ethical norms on data collection and to reduce the chance of getting more socially desirable answers than what participants actually think (Grover & Friens, 2006). Lastly, at the beginning of the survey the participants have to confirm that they have read the instructions and accept to participate in the study, hereby requesting the participant's informed consent.

4.3.3 Survey measures

After having consented to the survey participation at the start of the questionnaire, respondents are directed to the first real set of questions which are only consisting of control questions about gender, age, and if the participant has ever bought or sold Bitcoin. The order of the complete survey is constructed in such a way that it is encouraging the respondent to continue, by asking the less

mentally exhaustive 'closed' questions in the first part and the more effort-costing 'open' questions in the last part (McCombes, 2019).

In the next question, the respondents are asked to fill in what are their primary reasons for using (or at least being interested in) Bitcoin. This question is based on an already validated survey measure by Henry, et al., (2019), which has been used to explore among others the reasons for Canadians to own Bitcoin. Although being based on the survey question of Henry, et al., (2019), the options are slightly altered to fit within the Argentinian and inflationary context of this thesis. Both the original and modified version of the survey question are shown in Table 1. The most notable modification is the 'it is an investment' answer category, which is essentially split into two answers consisting of 'it involves an (speculative) investment' and 'it allows me to store value', to better account for the nuance between investing in Bitcoin out of speculative reasons or because it entails a crucial way to store value in the eyes of the respondent.

Table 1: Original and modified version of multiple choice survey question.

Please provide primary reason(s) for owning Bitcoin: (Henry, et al., 2019)	**Please provide primary reason(s) for using or being interested in Bitcoin: (Modified)**
I am interested in new technologies	I am interested in new technologies
It is an investment	It involves an (speculative) investment
I use it to buy goods and services on the internet in Canada/elsewhere	It allows me to buy goods and services on the internet in Argentina/elsewhere
I use it to buy goods and services in physical stores Canada/elsewhere	It allows me to buy goods and services in physical stores in Argentina/elsewhere
It allows me to make payments anonymously	It allows me to make payments anonymously
I use it to make remittances or other international payments	It allows me to make international payments and/or facilitate currency exchanges
It uses secure blockchain technology to prevent loss and fraud	It uses secure blockchain technology to prevent loss and fraud
I do not trust banks	I do not trust banks
I do not trust the government or the Canadian dollar	I do not trust the government or the Argentinian peso
My friends own Bitcoin	It allows me to store value
It's a cost saving technology	It's a cost saving technology.

The next set of three questions are asked via two multiple choice questions and a matrix table which all contain a 5-point Likert scale. Likert scales have the advantage that for the researcher they are easily constructed and administered, and for the respondent they are not difficult to understand (Grover & Friens, 2006). Table 2 presents the items of these questions. The items of the multiple choice questions are derived from the paper of Łyziak, (2010) who explores proper measurement of perceived and expected inflation variables, for example through survey questions. These perceptions can be seen as "an expression of an individual's complex assessment of a given issue" (ECB, 2007), in this case inflation. Therefore, this question measures the respondent's subjective ideas about inflation rather than considering official figures. Nevertheless, measuring this perception is relevant, as ultimately the Argentinians' subjective thoughts on inflation might prompt them to acquire Bitcoin, hereby feeling hedged against this perceived and expected inflation.

The matrix question is constructed by the researcher in order to create a measure for the *Bitcoin usage* variable which is part of the regression model in subsequent analysis. However, it is difficult to measure Bitcoin usage without specifically asking possibly time-sensitive and income-dependent questions about the actual amount of Bitcoin being used by the respondent. Therefore, there is decided to design the matrix question in such a way that actually the Bitcoin usage *intention* is measured. In this sense, it assesses the perceived likelihood of the participant to use Bitcoin.

Table 2: Likert-scale matrix questions

Multiple choice questions		Matrix question
In your opinion, is the price level now compared to that 12 months ago	**Given what is currently happening, do you believe that over the next 12 months prices will**	**Given that Bitcoin remains accessible in Argentina, (a) I intent to use Bitcoin; (b) I I am likely to buy Bitcoin**
(1) Much higher	(1) Rise faster than at present	(1) Completely disagree
(2) Moderately higher	(2) Rise at the same rate	(2) Disagree
(3) A little higher	(3) Rise more slowly	(3) Neutral
(4) About the same	(4) Stay at the present level	(4) Agree
(5) Lower	(5) Go down	(5) Completely agree

The last set of questions included in the survey are of an 'open' nature, so that the respondents are free to textually answer what they think, hereby allowing the researcher to conduct qualitative research on the herewith collected data (Bhandari, 2020). Furthermore, open questions are very helpful if the researcher wants to obtain a comprehensive and detailed answer or to find out

what exactly the participant is thinking when he or she responds on the question (Bhandari, 2020). The first question of this set is crucial in advancing the understanding around the question of how Bitcoin is being used by Argentinians to circumvent inflation. After providing a short introduction to the question, in which the two possible roles – store of value and vehicle currency – of Bitcoin are explained, the actual question is formulated as the following:

> Could you please briefly explain and elaborate if your experience with using Bitcoin is in line with either one of these two described roles of Bitcoin (or with both)?

The second question of this set aimed to foster additional insight about the unique economic and political context of Argentina and how this is connected to tendencies of acquiring Bitcoin. This is captured in the following question:

> Could you briefly describe if and why the economic and political circumstances in Argentina have made Bitcoin particularly interesting for you?[12]

A third and final question is asked to find out if the respondent has any remaining ideas about cryptocurrency's role in Argentina, which are not covered by the first two open questions. This question is formulated as:

> Do you have additional comments about Bitcoin or other cryptocurrencies and their role in Argentina?

4.3.4 Quantitative data analysis

The Likert-scale measures of variables perceived inflation and bitcoin usage intention yield purely quantitative results and are used to address the first proposition of the thesis, hereby also aiming to discover whether the results for the Argentinian case are similar to those of the first regression analysis (for H1) that considers the relationship between inflation and Bitcoin usage across countries. In this sense, for proposition 1 another simple linear regression analysis is conducted, in this case by regressing perceived inflation against the Bitcoin usage intention.

Firstly, the actual variables required for the regression model are created, by computing the mean of the two items measuring perceived inflation and Bitcoin usage intention. Deriving the mean response across a set of questions is a common and proper method to create a variable that contains roughly interval data, making them suitable for simple linear regression analysis (Carifio & Perla, 2008). Besides, given the fact that the data is constituted from the 5-point Likert scales, there does

[12] The survey is also translated to Spanish. For an elaboration on the translation process, see the appendix.

not have to be explicitly checked for linearity, since the data is not really of interval-scale, even though Likert scale-data is often treated like it is in order to comply with the required assumptions for creating linear regression models (Norman, 2010). In this sense, there must be noted that this also poses a slight limitation to this particular study, since there is assumed that all Likert scales are equally distanced, meaning that the distance between for example a 1 and 2 scale answer, is perceived similar as the distance between that of 4 and 5. Even though the five Likert scale options are designed in such a way that the separations among them are alike, it is still an assumption that they can indeed be interpreted as such. Though researchers like Norman, (2010) concludes from his literature review that researchers should not be afraid of "coming to the wrong conclusion" when interpreting the Likert scale data like this, as statistical history has proven the validity of the results derived this way.

Furthermore, in order to test if the measurement items were internally consistent, a short Cronbach's alpha analysis is conducted. The Cronbach's alpha is a common statistic to indicate whether or not the individual items are reliable in measuring their underlying variable, by checking the coherency among them (Grover & Friens, 2006). "In general, Cronbach's alpha's lower than 0.60 are considered to be poor, those in the 0.70 range acceptable, and those over 0.80 strong". (Sekaran & Bougie, 2016).

After the data is inspected and the Cronbach's alpha's are checked, the simple linear regression model is created via SPSS.

4.3.5 Qualitative data analysis

After having collected the data from the responses to the open questions out of the survey, it will be subjected to content analysis. Content analysis can be seen as a systematic method to code symbolic content (e.g. text & images) to find the themes that underly them (Herring, 2009). In the words of Lavrakas, (2008) when incorporating into survey research, "content analysis is a research method that is applied to the verbatim responses given to open-ended questions in order to code those answers into a meaningful set of categories that lend themselves to further quantitative statistical analysis".

Furthermore, given the background of literature that already developed theories about Bitcoin's function in specific pollical economic circumstances, a more focused form of content analysis is selected to assess these understandings. Thus, in this research directional content analysis is applied, which is useful when attempting to validate or extend an existing theory (Hsieh & Shannon, 2005). Within this particular form of content analysis, the process of defining codes already starts before the data is collected, as the coding categories are defined on the basis of certain

insights that are obtained from the literature. As elaborated in the literature review, the theory that needs further refinement involves the idea that citizens in financially instable countries acquire and use Bitcoin as a means to escape severe inflation. Particularly, the two theories considering in what way Bitcoin provides a tool to escape from inflation, need to be tested. Hence, these two ways are transformed to categories where codes, based on the quotations from the respondents, in the process of the content analysis can be assigned to. To briefly reiterate these two theories (or categories in this case); the first one can be termed as "store of value" and will contain all codes representing that Bitcoin is seen as an instrument to capture and hold value on the long-term, in contrast to the continuously depreciating national currency (as proposed by Krause, 2016; Moreno, 2016; Cifuentes, 2019). The other main theory could be termed as "vehicle currency" and will involve those codes referring to Bitcoin's use-case as a reliable and unrestricted way to acquire hard currencies like US dollars, or as a relatively unconstrained facilitator for international value transfers (as proposed by Pieters, 2017 & Ahlborg, 2020[13]). As the first open question is directly aimed to uncover the Argentinian experiences with either of the two roles, counting the amount of codes that can be assigned to them allows for the obtainment of some quantitative meaning with regard to which role is more dominant in the Argentinian case. In this sense, aside from the qualitative insights about the two proposed functions that follow from the interpretation of what exactly is being stated by these respondents, there is also sought to gain indications about the actual significance and magnitude of the one role compared to the other. It is a common way to present findings from directed content analysis by displaying the frequencies of codes that offer evidence either supportive or un-supportive for the theories being tested (Hsieh & Shannon, 2005).

Aside from these two categories derived directly from theory, other additional categories could still be added during the process of analysis. In this sense, out of all the data obtained from the three open questions, there will be created one comprehensive coding framework that encompasses all relevant categories that could be developed on the basis of the respondent's answers to the questions. That is, other possible motivations and developments with regard to the usage of Bitcoin by these Argentinians, either with regard to the inflationary context, or completely isolated from this, will also be embodied in the other categories part of the framework. Still, considering the content of the first open question, it is expected that most codes will be assigned to the first two categories outlined here above, as this question is directly concerned with finding out the Argentine experiences with either of the two roles described in theory.

To allow for more nuance in the categorization of the data, there could also be created so-

[13] Ahlborg, (2020) considers the vehicle role specifically for Venezuela, though to a lesser extent also for Argentina in his second article (both included within the appendix).

called “sub-categories”, which are smaller units that can be sorted into the overarching main categories (Bengtsson, 2016). Furthermore, the categories developed prior to the analysis could also be modified if nuances in the data suggest slight differences in their inherent meaning compared to how they are originally constructed (Hsieh & Shannon, 2005). In order to provide a quick schematic overview of the coding framework, it is useful to include a table that summarizes all categories and the incidence of codes that could be associated to them (Bengtsson, 2016). Moreover, following the guidelines of both Hsieh & Shannon, (2005) and Bengtsson, (2016) exemplars of quotations are provided to offer evidence for and explain why a certain code has been assigned to a particular category, while also illustrating the inherent meaning of the corresponding category so that qualitative interpretations can be derived from it.

Finally, it is important to outline here that two main rules are established against which the coding and categorization processes could be performed. Firstly, it is possible for the data of one respondent to be coded in two or more codes and categories. Hence, if for instance the respondent describes using Bitcoin for both its functions as a store of value and vehicle currency, the quotations portraying this are both coded and assigned to their underlying categories. Secondly, the data following from one respondent could never be coded twice or more into the same category. In this sense, when for example the respondent answers the first open question by stating that he uses Bitcoin as a store of value, a similar answer to the second question will not again be coded and assigned to the store of value category, this is only done one time. In addition to these two rules, it is meaningful to note that the identification and development of categories is done in such a way that they are “internally homogeneous and externally heterogeneous” (Bengtsson, 2016). The latter means that no instance of data should be falling precisely between two or multiple categories, and that no same piece of data should belong to more than one category.

Analysis

5.1. Results cross-country analysis

In order to test hypothesis 1, a regression analysis has been conducted in a similar form as the Krause, (2016) research. That is, of a total of 46 countries, inflation in 2019 (measured as the change in CPI in comparison to 2018), was regressed against the Bitcoin usage variable (amount of Bitcoin traded for Argentinian peso (ARS) on LocalBitcoins). Firstly, before beginning with the actual regression analysis, all collected data was briefly inspected to see whether there were absent values, or if there was any unclean data. While there did not seem to be any false data, during the inspection phase there was for example noted that Venezuela boasted a substantially higher inflation statistic, and that both Saudi Arabia and United Arab Emirates yielded negative inflation values. Secondly, the weekly BTC/ARS values derived from LocalBitcoins had to be summed to create the Bitcoin usage variable that expresses annual Bitcoin usage for the year 2019 across the 46 countries.

Following Krause's work, this Bitcoin usage variable was log transformed, which is a form of nonlinear transformation to achieve a more linear fit and reduce the heteroscedasticity within regression models (Hazarika, 2013). Achieving linearity is essential for a simple linear regression analysis to produce valid results, with R^2 and p-values that are of no statistical meaning in the case of non-linearity (Frost, w.d.) Following Krause, (2016), this transformation is required to enhance the fit between inflation, expressed as a percentage, and Bitcoin usage, expressed nominally. Having scatter-plotted the inflation and log bitcoin usage to check for rough linearity between them, it was notable that linearity was not entirely accomplished. This is because particularly Venezuela had an (hyper)inflation rate of 19910% in 2019[14], which in comparison with all other countries (< 100 % inflation) was exponentially higher. Removing Venezuela as a statistical outlier was therefore the only option to continue with the simple linear regression, as keeping Venezuela in the model could hurt the statistical robustness of the results. Still, there was also chosen to include one additional model where Venezuela was incorporated, since this country has been another major illustration of a country that experienced substantial rises in Bitcoin adoption due to the economic turbulence in the nation (Haesly, 2016; Cifuentes, 2019; Ahlborg, 2020). Hence, it is an important country to include within this analysis, though it should be noted that for this last model the reliability of the results is not entirely safeguarded because the linearity assumption has not been met (Bryman, 2012).

Furthermore, in Krause's research, the log transformation has also been applied for the (nominal) control variables of GDP and Population. However, in the current model there was decided

[14] As the inflation of Venezuela has not been published by the World Bank, it was retrieved from the IMF: https://www.imf.org/external/datamapper/PCPIPCH@WEO/WEOWORLD/VEN

to also include the variable log GDP per capita variable instead of the total GDP – measured by dividing the total GDP by the population – since that way there could be properly controlled for the country's income level. All the log transformations were performed using Excel's LOG-function.

Having checked the data and met the assumptions in order to perform a simple linear regression, the actual models were created via SPSS. In total, three regression analyses were performed. In all of the models, the predictor variable of inflation was, in combination with control variables, regressed against the dependent variable of log Bitcoin usage. In model 1, only the control variables internet penetration and population were included, whereas in model 2 also the log GDP per capita was incorporated to account for the actual size of the economy. Model 3 includes the same variables as model 2, though in this model the data of outlier Venezuela was also included. Table 4 shows the regression coefficients following from the analysis, while the exact SPSS output is included within the appendix.

First of all, the main coefficients appeared to be significant (**M1:** $F = 5.958$, $df = 3$, $p = .005$), (**M2:** $F = 3.698$, $df = 4$, $p = .012$) and (**M3:** $F = 4.840$ $df = 4$, $p = .003$). Second of all, when having looked at the coefficients of determination, the models seemed to have sufficient explanatory power, even though this power could be interpreted as rather weak (**M1:** $R^2 = .263$, **M2:** $R^2 = .270$, **M3:** $R^2 = .321$) in comparison to R^2 values as 0,5 (moderate) and 0,75 (substantial) (Henseler, Ringle & Sinkovics, 2009). Hence, the R^2 of around .3 of both the models indicates that about 30% of the variance in the dependent variable can be predicted by the independent variables (Bryman, 2012). However, when looking at the Beta coefficients, it appears that for the first two models (where Venezuela is excluded), this variance seems to be explained to a larger extent by the control variables than the actual inflation variable. The models make evident that in contrast to what was hypothesized, there seems to be no significant association between inflation and Bitcoin usage across countries, as the p-value for predictor variable inflation is substantially larger than 0.05 in both the models.

Only for model 3 the results seem to suggest that there exists some kind of positive correlation between these variables, where inflation significantly predicts the Bitcoin usage variable ($\beta = .00009$, $t = 2.510$, $p = .016$), even though this effect appears to be very small. To make sense of this Beta coefficient, the log Bitcoin usage should be "back transformed" (Benoit, 2011). Fundamentally, this regression indicates that for each one-percent change in inflation, log Bitcoin usage is also approximated to rise by .00009%. Back transforming this using the formula's described by the paper of Benoit, (2011), it means that Bitcoin usage is estimated to increase by $(\exp(0.000092944)-1)*100 = 0.009\%$. So for each percent growth of inflation, Bitcoin usage is expected to grow by 0.009% according to this model. However, besides the effect being almost negligible, to infer this approximation from Model 3 is also statistically unreliable because of the

above-mentioned violation of linearity. Therefore, the model is more useful to demonstrate the "Venezuela effect", as when compared to the other models the discrepancies in the results are significant, meaning that Venezuela is substantially influencing our understanding of the potential relationship between inflation and bitcoin usage. Still, statistically this model cannot be interpreted as robust, and the other two models do not seems to suggest that there exists a significant association, which is why on the basis of this total analysis hypothesis 1 could not be accepted.

Table 4: Proposition 1, Regression Models

	Model 1		Model 2		Model 3	
	BETA	**SIG.**	**BETA**	**SIG.**	**BETA**	**SIG.**
INFLATION	-.007	.553	-.004	.752	.00009*	.016
INTERNET PENETRATION	.008	.191	.003	.788	.002	.863
LOG GDP PER CAPITA	-	-	.248	.537	.296	.422
LOG POPULATION	.811**	.000	.827**	.000	.817**	.000

** = significance on the 0,01 level. * = significance on the 0,05 level.

5.2 Results quantitative analysis case study

The second half of the combined methods approach continued with the case study. In order to test the first proposition, another simple linear regression analysis was conducted, on the basis of data from 30 Argentinians that took the survey. There are many rules of thumb for how large the N should be to perform regression analysis, though a recent study of Jenkins & Quintana-Ascencio, (2020) points out that even in analyses with high variance in the data, a N of higher than 25 should be sufficient to produce a statistically robust regression model.

Similarly as before the analysis of the previous section, there was inspected if the data was clean (e.g. not missing any data points), which was done by scanning through the data and by looking into the frequency tables that could be produced through SPSS. Furthermore, a reliability analysis was conducted, by identifying the Cronbach's alpha of the two variables (both consisting out of two measurement items). Following from this analysis, Cronbach's alpha's of 0.84 and 0,80 for the perceived inflation measurement and the Bitcoin usage intention measurement have been found respectively, suggesting that the measurement items are internally consistent and therefore should boast reliable results in subsequent regression analysis.

After having inspected the data and controlled that the measures are indeed reliable, regression analysis could be employed, with which the determinantal impact of the independent variable of perceived inflation on the criterion variable of Bitcoin usage intention was tested. As Hünermund and Louw (2020), stress that the impact of predictor variables should be identified and verified by also running a simple linear regression model that includes control variables, a second regression was developed in which the control variables of age, gender and if the participant has had purchased Bitcoin at least once, were also included within a second model. Both models are presented in table 5.

First of all, the regression models appeared to yield significant coefficients (**M1:** F = 11,224, df = 1, p = .002) and (**M2:** F = 5.792, df = 4, p = .002). Secondly, the R^2 value has been considered to determine the degree of variance in the dependent variable that is explained by the independent variable. The calculated R^2 of .286 (**M1**) suggests that the model is only for about 30% explaining the variance in Bitcoin usage intention, implying that it is statically likely that there are other factors that to a substantial extent are also influencing the latter variable. In other words, in terms of explanatory power, this rather low R^2 value signifies that the model is not that strong (Henseler, Ringle & Sinkovics, 2009), which makes sense considering the fact that only one predictor variable – perceived inflation – has been included within the analysis. In **M2** this explanatory power (R^2 = .481) was substantially higher though, probably because of the last control variable that controlled for the effect of earlier Bitcoin transactions by the participant. This is logical, since it is likely that if the participant has already bought Bitcoin before, they are more likely to buy/use it again, which is also reflected in the significant Beta coefficient for this control variable.

Interestingly, both the models seem to indicate that inflation is positively associated with the Bitcoin usage intention (**M1:** β = .454, t = 3.350, p = .002) and (**M2:** β = .505, t = 3.822, p = .001). Including the control variables within Model 2 did not change the result of a significant correlation between those variables, making this indication more reliable. When considering model 1, fundamentally it predicts that for a one-point increase[15] in perceived inflation, the Bitcoin usage intention will also rise by .454 point.

[15] Consider that a one-point change in this case depicts the score of the Likert scale measuring the variables that ranges from 1-5.

Table 5: Proposition 2, Regression Models

	Model 1		Model 2	
	BETA	**SIG.**	**BETA**	**SIG.**
PERCEIVED INFLATION	.454**	.002	.389**	.001
GENDER			-.335	.378
AGE			-.079	.565
PURCHASED BITCOIN BEFORE			1.487**	.006

** = significance on the 0,01 level. * = significance on the 0,05 level.

With the limitations of sampling, the relatively few number of observations (N) and the quantitatively expressed survey responses (Likert scales) in mind, the interpretation of the results must be approached with caution. It should be especially stressed that the findings should not be generalized for the whole Argentinian population, since 28 of the 30 participants indicated that they have purchased Bitcoin at least once before, meaning that the sample almost only included Argentinians that already adopted Bitcoin. Still, this analysis is indicative for a significant association between inflation perceptions and the intentions of using Bitcoin. In this sense, for these sample of Argentinians interested in Bitcoin, these results seem to indicate that the more there is perceived that the Argentinian peso is inflating, the higher is the willingness to use Bitcoin. On the basis of this regression, the first proposition (P1) is confirmed.

5.3 Results qualitative analysis

5.3.1 Overview

Subsequently, the qualitative analysis was conducted to gain a deeper and more insightful understanding about the research question. This analysis sheds a light on proposition 2 and 3, by answering the question 'how' Bitcoin is being used in Argentina to escape inflation. Besides the main straightforward aim to identify Bitcoin's primary role in countering inflation within Argentina, all other aspects derived from the data that are relevant for evaluating Bitcoin's role in the country are also integrated, and can either substantiate one of the two perceived roles or be separate entirely.

Before starting off with the interpretation of the answers to the open questions and the presentation of the framework however, the results of the first closed survey question – where the respondents could select their main reasons for using Bitcoin (N= 30) – are presented here in table 6. They provide an insightful overview and shed some light on the overall sentiment of this sample with regard to the role of Bitcoin, which is already suggestive for the results of the open question analysis.

Table 6: Results closed question.

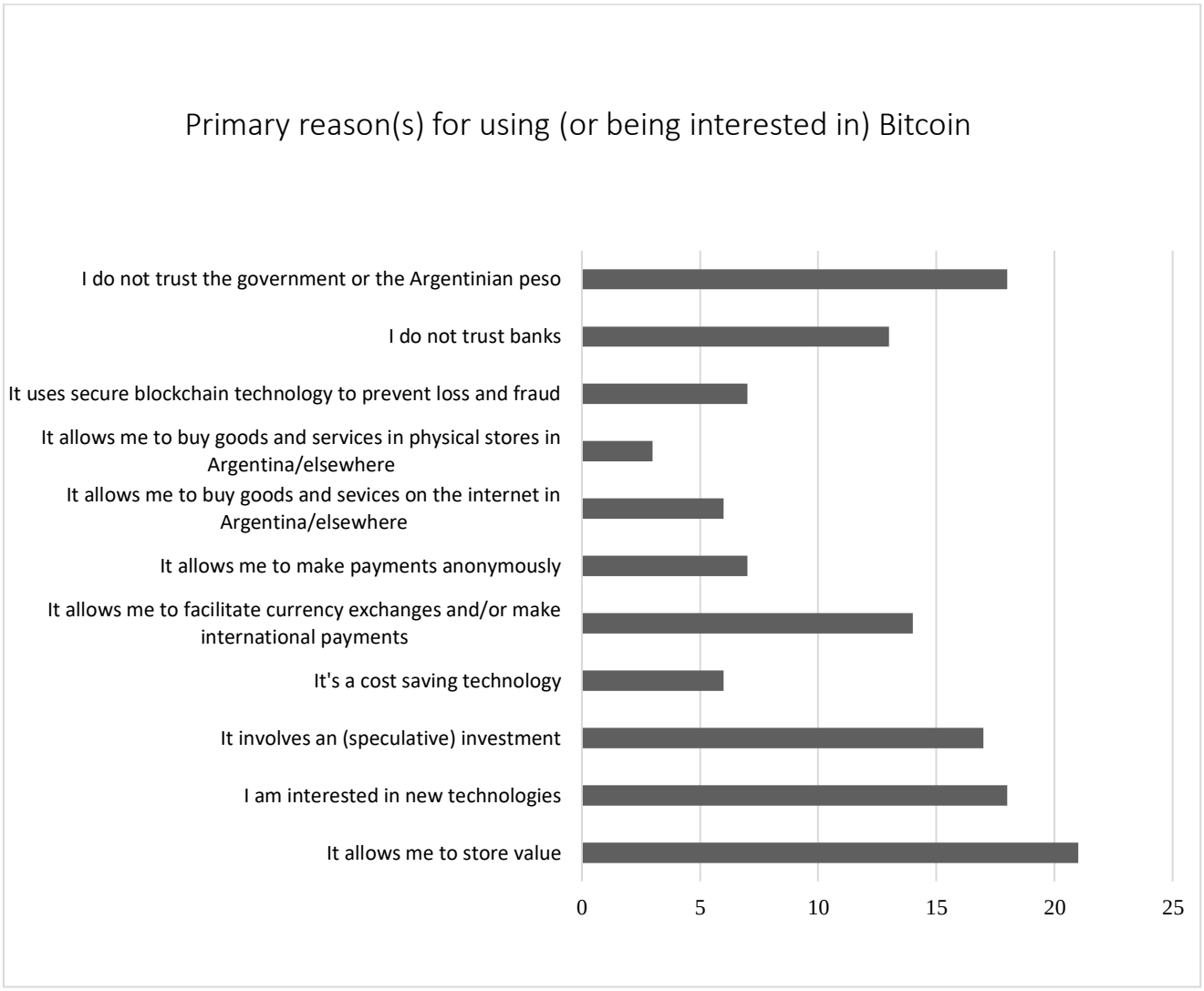


Table 6 makes clear that on average, as expected from the theory, for these Argentinians the most significant argument to use Bitcoin is its store of value function (21 / 30). The ability to use Bitcoin for the facilitation of currency exchanges and other international transactions (the vehicle currency role), is regarded as a main reason for about half of the respondents (14 / 30), providing the indication that this particular role is ascribed main importance to by fewer Argentinians than the store of value role. Logically, more than half of the respondents express that their overall distrust in the Argentinian institutions is a primary rationale for using Bitcoin (18 / 30), which is also in line with theory (e.g. Cifuentes, 2019). It could also mean that using Bitcoin 'an sich' is already a symbolic way to express a form of opposition towards these distrusted Argentinian institutions, since Bitcoin fundamentally is a 'stateless' type of currency. This is much like the steep adoption curve in 2013 within China, which was in part also due to the ability of Bitcoin to empower citizens with an ideology of decentralization and autonomy. Fundamentally, this contrasted with the Chinese state's

centralization philosophy (Kaiser, Jurado & Ledger, 2018). The last result from this question that is worth noting, is that more than half of the respondents indicate that Bitcoin's technological novelty is a main argument to use Bitcoin (18 / 30). This suggests that in this particular period, to a certain extent Bitcoin, is only interesting for those Argentinians that also have an affinity with (new) technology.

Having these overall rationales in mind, the framework of categories is created according to the interpretation of the open question data and is presented in table 7. The framework shows the amount of codes that followed from the data and which could be assigned to one of the (sub-) categories described in the table. It's worth noting that not every category has been divided into sub-categories, and that for the categories containing no sub-categories, the amount of codes is only displayed in the 'total'-row at the bottom of the table. These are the only relevant categories that could be constructed on the basis of the data – meaning that no categories were left out from the framework. In the next section there is elaborated on this framework and example quotations will be provided to help illustrating the (sub)categories. Lastly, it is important to note that only 23 of the 30 respondents answered the open questions, so N = 23[16]. All answers to the open questions are included within the appendix.

Table 7: Coding framework

Category	**Store of value**	**Vehicle currency**	**Stable currency**	**Free from the government**	**Means of exchange**	**Speculative investment**	**Technological affinity**	**In its own right**
Sub-category	Hedge against peso devaluation	Obtainment of hard currency	Stable store of value	Unrestricted by monetary regulation	-	-	-	-
Codes	13	3	2	6	-	-	-	-
Sub-category	Alternative to dollar	International value transfers	Stable means of exchange	Decentral monetary revolution	-	-	-	-
Codes	5	3	2	5	-	-	-	-
Total	**18**	**6**	**4**	**11**	**3**	**3**	**2**	**2**

[16] Respondent 5, 9, 10, 20, 28, 29 & 30 did not fill in the open questions, see appendix.

5.3.2 Store of value

To start off with the first main category – store of value – coding of the data seemed to justify that this as a primary function of Bitcoin in the Argentinian context, as many codes could be assigned to it. Furthermore, substantially more participants subscribed to this store of value role (18) than to the vehicle currency role (6), already signifying that this former role is more significant in the aim to counter inflation than the latter when the quantitative amount of codes is concerned. Based on interpretation of the obtained data, there was decided to split this category into two sub-categories, where the "Hedge against peso devaluation" sub-category has the more general codes about using Bitcoin as a saving object that hedges against the inflationary Argentinian peso assigned to it. To provide an example of such a quotation that could be coded and assigned to this sub-category, the following verbatim quotation is presented:

"Concerning Argentina, people who bought bitcoin in 2018 at the maximum price of USD19000 have still make more money than if they had held on to the argentinian currency during that period" (R-1[17]).

This quote makes clear that Bitcoin for this Argentinian citizen has meant a better alternative of value preservation than keeping savings in peso's, even when considering buying Bitcoin at the worst possible time when considering its price in US dollars. In other words, it is emphasized that holding Bitcoin has so far meant evasion of severe value depreciation in the case of holding the local currency, also when taking into account the marginal possible losses due to Bitcoin's price volatility. This codes therefore seems to confirm statements of scholars like Moreno, (2015); Krause, (2016); and Cifuentes, (2019) who argue that Argentinians are using Bitcoin as a store of value, as the price fluctuations of this digital currency are less problematic than the rampant inflation of the local currency. Some codes also reflect the overall distrust in the Argentinian peso and in the way this currency is being managed through monetary policy of the Argentinian central bank, growing the perception that high amounts of inflation are not diminishing any time soon. The following two quotes illustrate these type of codes*: "I use it to protect my earnings against inflation. Inflation is expected to be 3 digits in the next two years. We don't trust in our currencies" (R-12);* "*bitcoin is the best asset in the world for reserve of value, this aspect combined with hyperinflation and very bad economic management of central bank, makes me want to save my assets in bitcoin instead of any kind of fiat money" (R-18).*

Again, Bitcoin's store of value role is utilized as a way to hedge against the expected continuing inflation of the domestic currency

[17] With R-(n) there is referred to the specific respondent where the quote was taken from, in this case respondent 1.

In the second sub-category that embodies the other half of the store of value category, codes were integrated that specifically mentioned that Bitcoin has taken the US dollar's role in safeguarding value over time. In this sense, these codes emphasize that Bitcoin has become an alternative to the dollar in this regard, hence the sub-category is formulated "Alternative to dollar" and the following quotation is an illustration: "*Argentina has an unstable economic and social policy, which causes the value of our sovereign currency to lose value month after month. For this reason, Argentine citizens need to protect the value of their savings in hard currency such as the US dollar, however, the government of this country has come out to collect taxes from those who want to buy US dollars, and for this last reason, the population Argentina has gone out to buy cryptocurrencies, telther and bitcoin mainly*" (R-11).

This quote, and in total 3 of the 5 codes that were assigned to this subcategory, make evident that Argentinians turn to Bitcoin in storing value because acquiring the priorly dominant 'hard' currency – the US dollar – is associated with severe restrictions, making it substantially less viable to do so. These restrictions are implemented in two main ways, with the first way being the overall tax collection on the exchange of pesos for dollars, and the second means being the absolute limit in how much you can obtain in a specific period. This is also described by one of the participants: *"And those who are allowed to buy [dollars] legally, cannot do so for more than 200USD / month and with 65% taxes" (R-24)*.

In this sense, this sub-category most of all embodies the tendency of some Argentinians to purchase Bitcoin as a hedge against inflation in a period where preceding methods of storing value – by acquiring dollars – are hindered to a significant extent by centrally implemented capital controls, as also described by Moreno, (2016).

On the basis of this analysis, where in total 18 of the 24 respondents indicate and explain that they are using Bitcoin for its store of value role, proposition two is accepted.

5.3.3 Vehicle currency

The second main category, vehicle currency, surrounds the idea that Bitcoin could also serve another role to help evade getting deprived by inflation. This idea suggests that while capital controls hinder traditional ways of obtaining hard currencies, Bitcoin allows for the circumvention of these restrictions by acting as an unregulated gateway that facilitates in their acquisition. In total 6 answers were coded and assigned to this category, meaning that only 6 respondents subscribed to this role of Bitcoin, indicating that significantly less Argentinians are using Bitcoin as an intermediary than as an object to save value. Still, this role should not be neglected, since the function is simply existent according to the results. Based on the data, this category has also been divided into two sub-categories where the first one – obtainment of hard currency – is created on the basis of codes

indicating that Bitcoin is used as a facilitator or 'bridge' currency nationally to acquire hard currency without being hampered by measures that restrain from doing so. The following quotation is an example: *"Cryptos give us the possibility to escape the barriers to get other currencies and escape from the peso" (R-6).*

Furthermore, the other subcategory – international value transfer – elicits the international aspect of Bitcoin as a vehicle currency, not always with an aim to counter inflation, but consistently to circumvent the capital controls. It could for example involve an aim to counter inflation if one desires to transfer value into foreign capital markets, but it could also involve an objective to make a remittance (e.g. to a family member abroad), which is not inflation-related. In this sense, Bitcoin is used to make international payments and/or to receive value from abroad, as capital controls limit the ability to conduct transactions in other fiat currencies. The following two quotes are exemplary for this sub-category and illustrate both the sender and receiver features of Bitcoin as an international value transmitter: *"Also, due to restrictions implemented in the last year, bitcoin (and other crypto) have become one of the only (if not the only) methods to transfer money outside of the country" (R-1); "I use bitcoin to escape capital controls since I work for a foreign company." (R-19).*

Especially for this latter subcategory, it is likely that Cuevas are co-facilitating these currency exchanges together with Bitcoin, as also described in the second (Argentinian-focused) article of Ahlborg, (2020). When considering this for R-19's situation, following Ahlborg's explanation, an Argentinian expat could contact the Cueva to transfer BTC to them (which he/she either directly earned or acquired by exchanging it for the local currency of the host country), whereafter the Cueva would distribute either dollars or pesos to the family member of the expat. Still, when considering all codes within the vehicle currency category, no respondent provided an exact explanation in how Bitcoin is used step-by-step to facilitate in converting currencies both locally and internationally. Assumably, this is achieved by a variety of ways, where the one explained above is just an example.

Given that the vehicle currency role seems to be less dominant according to this analysis, proposition 3 can only be accepted to a lesser extent than is the case for the store of value role. This is also in line with the claims of Ahlborg, which entail that the vehicle currency role is less required in Argentina than in Venezuela due to the existence of the blue dollar system via which Argentinians already are able to acquire US dollars without being hindered by capital controls.

5.3.4 Stable currency

Interestingly, in total 4 respondents signaled that Argentinians are also taking a slightly different direction in their search of dealing with inflation. This direction still entails the use of cryptocurrency for the latter purpose, though it does not always assume a preliminary role for Bitcoin with regard to this. Instead, many respondents championed the idea and use of other so called "(digital) stable

coins" to counter inflation. Codes of this type have not been pre-identified from theory, so a new coding category – stable currencies – was created during the coding process in order to be able to accurately assign these codes. As their name suggests, stable coins aim to offer a stable value in comparison with the highly fluctuating Bitcoin price (against traditional currencies): "Stable coins have emerged in the recent past with an approach to mitigate this volatility through a sustained peg (or in cryptocurrency jargon, a "tether") with traditional instruments such as the US dollar or a basket of currencies" (Chohan, 2019). Issuers of stable coins assure that the stable currency can always be exchanged for a predetermined amount of fiat currency, making the stable coin essentially a "backed" currency, which also still operates on the blockchain.

A distinction can be made between stable coin codes that essentially take the store of value argument and codes that take a means of exchange argument, as both are apparent in the data. In this sense, the first subcategory is based on codes suggesting that stable coins replace Bitcoin as an asset that can store value and therefore form a hedge against inflation. Hence, this sub-category is termed "stable store of value" and the following quote is an example:

"For many from Argentina, they use bitcoin to save the purchasing power of the currency. But as Bitcoin is volatile, it takes away reputation points. This has been corrected with the appearance of stable coins, such as USDT, which are a safeguard of value, and at the same time are not volatile (compared to bitcoin)"

These codes therefore describe stable coins to be a safe haven, maintaining value in the long-term by being tethered against hard currency like the US dollar. As it's already historically common for Argentinians to hold US dollars to circumvent depreciation of the peso (Moreno, 2015; Cifuentes, 2019), it makes sense that they would also acquire and maintain stable coins like Tether (USDT) and DAI, that are both attached to the US dollar. Essentially, these stable coins offer an evenly valued digital alternative to the fiat dollar, which is especially attractive when a cheap and legal way to obtain real dollars is absent. Besides, in comparison to Bitcoin it is perceived as way less risky to store value within such a stable coin, since they are not subject to heavy volatility, instead being as stable as the US dollar. Notably however, there could also be stated that the US dollar is not a suitable store of value either: "*Regarding inflation, it [Bitcoin's store of value role] not only works for the peso but for the US dollar"(R-21).*

This gives rise to the idea that for some Argentinians these stable currencies are not regarded safe store of value since their tie with the US dollar makes them also sensitive to the inflation that the US dollar is enduring.

Secondly, other codes represent the idea that stable coins are taking over Bitcoin's role as a means of exchange, which could also mean the explicit vehicle currency function in which they could facilitate currency exchanges like crypto/USD, but most of all they highlight their significance in

fostering transactions both in the country as beyond. These codes are assigned to the "Stable means of exchange" sub-category of which this quotation is an illustration: *That's why in Argentina dollar-linked coins such as DAI, USDC or USDT have become somewhat popular, seeing as they're perceived as digital dollars. I believe these stable coins are more widely used than BTC for national and international payments, partly because people can use them freely (no government regulation or interference) and partly because BTC owners generally prefer to hold on to them hoping the price will increase (R-2).* This quote makes clear that because of the very idea that Bitcoin is perceived as a store of value, also means that it is not used that much for actual transactions, as Argentinians instead opt to hold Bitcoin as a saving object.

5.3.5 Free from the government

Besides the main coding categories – store of value and vehicle currency - that were dominant in the data, as the first open question directly asked about them, there could also be created another category based on codes that were substantially prevalent in the answers of the respondents. That is, a total of 11 codes could be assigned to the "Free from the government" category. To some extent this category is intertwined with the first two categories since there could for example be referred to the fact that Bitcoin is almost completely separated from the traditional Argentinian financial system, making it free from the impact and regulation of the central authorities and forming the ground for the belief that it is not subjected to inflation like is the case for the Argentinian peso. Based on that, there could be argued that Bitcoin is a suitable store of value, making such a code falling both under the store of value and the free from the government category. However, there was decided to create this distinct category including the codes that not specifically were directed at countering inflation, instead focusing on the idea that Bitcoin being free from interference is valuable in its own right within the Argentinian context.

The first sub-category that could be conceived on the basis of 6 codes, is termed "Unrestricted by monetary regulation", and it embodies all such codes that reflect the significance of Bitcoin being unaffected by regulation of the government to control and oversee the flow of fiat money. An example is provided by the following quote: "*The most valuable use case of BTC in Argentina, in my opinion is it's ability to not be regulated easily and therefore less of a subject of arbitrary sudden government policy. This use case which is a theoretical advantage in many places (as stability is provided by law, tradition or a stronger ballance of power within the republican system) in Argentina is an actual necessity, and citizens are in constant search of alternatives to solve this pervasive issue." (R-7).*

The first main observation that could be retrieved from this quote, is that Argentinians have

been structurally experiencing abrupt policies that have greatly influenced the way they have been living their financial lives, making them prone to be continually looking for options to escape this financial insecurity and uncertainty. An major example of such a sudden impactful form of government action has been an event known as Corralito in 2001, where the dollar-denominated bank accounts were frozen in order to prevent these from flowing out of the category (capital flight), whereafter these dollars were eventually converted to pesos against an very unfavorable exchange rate that did not reflect the market, for many resulting in an overnight value loss of approximately 75% (Lopez, 2002; Ahlborg, 2020). Furthermore, such swift restrictive policy can to a lesser extent also be found in more recent political activity, like the 200 US dollar quota and the 35% taxes that have to be paid for conducting transactions in US dollars and other foreign currencies (BRCA, 2020). Secondly, the quote also makes clear that the aspect of Bitcoin being free from restrictive monetary policy, is perhaps only a benefit on paper in countries that experience more stability due to a well-established balance of power grounded in democratic law, though it is an actual practical advantage in Argentina in which power is largely perceived as unbalanced. In this sense, Bitcoin is understood as a tool that allows Argentinians to escape regulation limiting their financial options, which is also reflected by this quote where the undesired oversight of a major public financial institution is depicted: "*yes , because the AFIP (institution that control money and posessions of people) is pressing people all the time about what they spend with credit card or buy" (R-3).* This use-case is logically less relevant in countries where severe monetary control and the implementation of this type of sudden policies are less prevalent, which is in line with the Clegg (2015) argument for Bitcoin being more interesting in developing countries.

The other sub-category that has been constituted out of the remaining 5 codes for this category, has been termed "decentral monetary revolution". The revolution aspect of this sub-category should be emphasized, as all codes that are included signify the specific idea that Bitcoin could drastically transform politics and the coupled international financial infrastructure. In this vain, this sub-category could be regarded as a more extreme interpretation in which Bitcoin is viewed as the solution that is to replace the traditional centrally regulated and controlled financial power, or at least allowing citizens to function separated alongside it, while not being financially hindered. In this interpretation the significance of Bitcoin for revolutionizing the political economy, is sometimes considered going beyond Argentina alone. The following two quotes are examples: "*We have to enter the new eras of the sovereign individual and destroy the countries with their superpowers as we know them now" (R-19)*; "*The grand majority of politicians are scam-artists, so trusting them is not possible. In fact the whole world system will experience an inevitable collapse. This is mainly the reason, aside from that its a great store of value. Bitcoin is the greatest social experiment that has existed"*(R-13).

Although seeing Bitcoin as the initiator of a worldwide monetary revolution is not a view exclusive to Argentinians[18], the political and economic circumstances within Argentina certainly amplify this idea. One of this circumstances has been the perceived corruption within the country, which also becomes clear from another quote coded within this subcategory: *"I think BTC (and cryptos in general) are a huge new world that allows people escape from the socialists and corrupts goverments. The corruption has been spread all over the political system. Every goverment just want to win the elections to get benefits for themselves."*(R-6).

Bitcoin is thus also described as a method of overcoming corruption, since it's a way to separate oneself from the traditional financial structure wherein corruption has taken the upper hand. This corruption results from untrustworthy arrangements between public authorities and private financial institutions: "also it's a way to avoid corruption. Argentina + banks don't have a good relationship (R-25)". In addition to this perception, a more institutionalized position for Bitcoin within Argentina could also disable the corrupt officials as the transparency and openness of the blockchain would expose their financial activity so that they could be held accountable in cases of illegitimate flows (Nicholson, 2017). In general, this category reflects the optimistic evaluation with regard to a fully integrated Bitcoin within Argentina, which is viewed by some as the core monetary transformation required to move towards a more desirable economy: *"I maintain that its incorporation will allow us a beneficial adaptation to the decentralized economy" (R-16).*

5.3.6 Remaining categories

Out of all the data collected from the respondents, there could also be developed four other categories that provide additional insight into the role of Bitcoin within Argentinian's context. Still, they were less pronounced in the data which is reflected in the relatively low amount of codes that could be assigned to them.

Firstly, on the basis of three codes the "means of exchange" category was formulated. The codes that fall under this category reflect those expressions from respondents that are indicative for the specific usage of Bitcoin to purchase goods and services within the country. As only three codes could be assigned to the means of exchange category, it reflects that Bitcoin is not (yet) taking a dominant role in the everyday life of Argentinians when it comes to purchasing from merchants and service providers. Moreover, the codes most of all signify that Bitcoin is not yet adopted for its attributes as a means of exchange for general use yet, but could certainly be so in the future. The following two quotations can be seen as examples for this: *"Later, over time, its use as "currency" for the acquisition of goods and services" (R-17) ; "It should be a medium of exchange but the high*

[18] Several authors also expressed their thoughts of Bitcoin being revolutionary in the monetary context. See for example Rose, (2015) and Lesyk, (w.d.).

commissions and not increasing the size of the block prevent it" (R-22). The first quotation is in line with the argument of Krause, (2016) who describes that the more people will acquire Bitcoin to store value, the more people will accept it as a way to conduct everyday transactions, since this is a logical consequence following from the desire of vendors and service providers to acquire this currency. In this sense, higher adoption rates for Bitcoin as a store of value is going hand in hand with broader market acceptance.

The second quote portrays technological burdens that need to be overcome within the Bitcoin architecture itself, in order for Bitcoin to attain the means of exchange role. These enhancements could indeed be made given open-source nature of Bitcoin's role, allowing for continuous upgrading. Already significant developments like the "Lightning Network" – a second decentralized layer on the blockchain architecture allowing for scalable and near instant payments – have been integrated into Bitcoin's protocol after almost a decade since the initial introduction of the cryptocurrency (Antonopoulos, 2017).

Another category that has been created is termed "speculative investment" and although it contains roughly similar codes to the store of value category, it differentiates from those in the sense that the speculative investment codes not necessarily reflect the need for acquiring Bitcoin as a survival tool to overcome inflation. Rather, they specifically signify Bitcoin's properties as an asset class with the historic and continuous tendency to appreciate in value, therefore highlighting it as an speculative investment object. In total, 3 codes were assigned to this category, where the following quotes shows two of them: *"The first reason for acquisition was for future use (betting on an increase in value?) "(R-17) ; "bitcoin is a good future investment. In the community it's usually common to say " invest what you are willing to lose" (R-25).* These codes seem to make clear that for some Argentinians Bitcoin is being held not with the focus on the necessity to *store* value, but instead as a short-term opportunity to *increase* value. In this sense, these codes describe a similar attitude to Bitcoin as investors in many other countries that value Bitcoin like an asset class that is risky but has the potential for significant short-term gains. This is also in line with authors like Hong, (2016) who appreciates Bitcoin as an alternative to more traditional investment vehicles like stocks and bonds because of the potential that massive price fluctuations bring. In other words, within this view the speculative aspect is emphasized over the pure need for a hedge or safe heaven to economically survive, which is logically comparable to the grounds for investing in Bitcoin for those not under direct inflationary pressure.

Another two codes illustrate that one should not yet perceive Argentina to have become a major Bitcoin/crypto country where a large percentage of the citizenry is engaging with these digital currencies, it is instead still a novelty that only a small group of tech savvy Argentinians are adopting, especially out of technological interestedness. The coding category for this has been termed

“technological affinity” and another quotation is provided as an example of a code within this category: *“People don't understand [Bitcoin] and the adoption rate is very low. It is relegated to the technological part of society, it's a geeks thing for a lot of people”(R-12).* The respondent emphasizes here that outsiders should not perceive Bitcoin as being some kind of broadly accepted solution to economic problems within Argentina. Instead, its function is only discovered and applied by a marginal amount of Argentinians that feel a particular attraction towards technologies. An insight which is also shown in the results within table 7, but which is in contradiction with Moreno, (2016) who states that common Argentinian people which are not specifically tech-savvy, have been adopting Bitcoin out of the need of economic survival.

The final category that was constituted out of the two remaining codes, is termed “in its own right”. The two codes assigned to it stress that Bitcoin is interesting in its own right, apart from politics and the economic situation in Argentina. This could be because of the technological innovations inherent to the coin, but Bitcoin also embodies many other aspects that one might find interesting. An example quote is the following: *“Bitcoin got my interest regardless of the policies and circumstances of the country. It is growing but with the focus of attention diverted. Still it is the way he found to make himself known” (R-17).* Although not entirely clear, this respondent could in the last sentence be referring to Satoshi Nakamoto, the creator (or group of creators) of Bitcoin, who is or are still unknown, bringing a mysterious facet to the whole project many people find very interesting (which is reflected already alone by the sheer amount of articles trying to find out the identity of Nakamoto). This last category, although only containing two codes, reflects that it is not just the specific Argentinian context that makes Bitcoin an interesting concept and phenomenon to use for some Argentinians, it could also just be the properties Bitcoin embeds on multiple dimensions that make it an appealing project (e.g. mathematics, technology, energy, etc.).

Conclusion

This last section of the thesis has the purpose of summarizing and discussing findings, considering the implications for relevant actors, and reflecting on how the results fit within the considerations of prior theory about Bitcoin's function and relevance in specific circumstances. Given the mixed methodology approach and the two-fold nature of the research question, structurally it is sensible in the first place to reflect on the findings of the quantitative data analysis and the case study independently. However, this does not mean that the conclusion is completely split into two parts, as it is interesting to evaluate the way the findings intersect and overlap. In this sense, rigid findings of correlations between inflation and Bitcoin usage are extended by qualitative insights derived from the Argentinian case, shedding light on the instrumentality of Argentina with regard to this relationship, and illustrating how this relationship takes form.

To start off with considering the results of the cross-country regression analysis, there could not be concluded that inflation is significantly associated with Bitcoin usage internationally. Adding to this, the analysis failed to reproduce findings of Krause, (2016) who did find a significant positive relationship between the two variables, though used data from 2015 and included less countries within the analysis. Moreover, the results of this analysis seem to contradict the theoretical grounding for Bitcoin having a more useful and prominent role in contexts enduring higher inflation, as proposed by authors like Clegg, (2014) Krause, (2016) and Huang, (2020). Still, it might be too premature to completely write off that a meaningful correlation between inflation and Bitcoin usage is currently existent, as incorporating Venezuela in the analysis changed the results substantially and produced findings suggestive of a significant relationship, despite that this cannot be reliably statistically concluded, as linearity assumptions are violated by this country's inclusion. Furthermore, concluding uncorrelation seems to be at odds with the continued output of articles describing recent adoption increases in countries where inflation is high, such as Turkey (Taskinsoy, 2019) and Nigeria (BBC, 2021).

Considering the latter, it is more appropriate to conclude that additional research on the exact influence of inflation on Bitcoin usage is needed to generate a more reliable answer to the first part of the research question. The appeal for more extensive research on this, is substantiated by the need to overcome one of the main limitations of the methodology in this thesis, which could have definitely hurt the validity of the findings. This limitation involves the way the Bitcoin usage variable was constructed and through which data it was measured. As already explained by Alford, (2018) it is difficult to get an accurate overview about how much Bitcoin is being traded per country, since it can

be exchanged on a variety of platforms like public exchanges and peer to peer marketplaces which are mostly different from country to country, some of them even concealing total exchange volumes from the public. While the Bitcoin trading volume per country of peer to peer platform LocalBitcoins is public and could be seen as indicative of the differences between exchange amounts across countries (Alford, 2018), results are still biased by the dissimilarities in the share of total Bitcoin exchanges that are facilitated by LocalBitcoins. In other words, if for instance Brazil would have a large amount of Bitcoin transactions in comparison to other countries, but relatively only a very small amount of them are conducted through LocalBitcoins, Brazil would have a deceivingly low Bitcoin usage in this analysis. Overcoming this hurdle with regard to proper assessment of the Bitcoin usage variable could be considered a substantial academical challenge, though a necessary one when there is a desire to conduct these type of analyses rigorously.

Perhaps advancements made in "blockchain analysis" – where Bitcoin's transparent blockchain ledger is examined to learn more about the flow of Bitcoin on a data-driven way that is not dependent on the officially published figures (or lack thereof) by exchanges and other financial institutions facilitating Bitcoin trades – can improve future research attempts targeting similar research questions.[19] For instance, blockchain analysis that enables the inspection of the crypto flows from outside into the exchange (on-chain volume), can help to check if the reported trading volumes of exchanges are perhaps faked to seem higher, as these exchanges might exaggerate the figures to look more attractive for potential new investors (Chainalysis, 2019). In this sense, the utilization of blockchain analysis could be incorporated into research involving variables of Bitcoin usage for its ability to obtain more accurate volume data, though, on the flipside, it requires sophisticated technological capabilities with regard to the blockchain infrastructure.

Even though the cross-country analysis failed to find a significant correlation between inflation and Bitcoin usage, the examination of the Argentinian case showed that, at least for this country, the two variables are not entirely unconnected. On the contrary, the survey research produced results which indicated that inflation is actually a main driver of Bitcoin usage. Aside from the quantitative part of the survey research, the qualitative part confirmed and deepened the idea that the substantial inflation of the Argentinian peso induces the desire to obtain Bitcoin, with many open question answers reflecting that Bitcoin is perceived as a hedge against the monetary instability of the peso.

When taking the findings of the regression analysis from the closed survey question-data into consideration, there must be noted that they should be interpreted with caution and that there are

[19] A major player with regard to blockchain analysis, open to collaborations, is the company Chainalysis: https://www.chainalysis.com/ . Though with a sufficient technological understanding about the blockchain infrastructure, it might be possible for academics to undertake blockchain analysis themselves

considerable limits to how far they can be generalized for the Argentinian population, even more so when generalizing for even broader scopes. Still, aside from the limitations, it's interesting to conclude from the examination that for these Argentinians already interested in Bitcoin, the intention to use this crypto currency is positively correlated with the degree of perceived and expected inflation. This finding is therefore in line with the work of authors like Moreno, (2016) and Cifuentes, (2019) who emphasize that Bitcoin is on the rise mainly because of inflation in Argentina. Furthermore, the finding corresponds with theory rooted in Austrian economics, wherein is described that Bitcoin has real-life implications for citizens in those specific (developing) countries, where monetary management of central institutions seems to be only aimed to benefit themselves instead of the people they govern, mostly reflected in the inflation they induce (Clegg, 2015). Moreover, it seems that in Argentina the Austrian economic critique on the government's monopoly on money has valid grounds. Although the degree of predatory activity and monetary mismanagement of those institutions can be debated, the qualitive insights derived from the content analysis show that at least in the eyes of these Argentinians, the central authorities are to blame. Many respondents indicate not only that the problem of unbearable inflation is indeed there, but also that this is caused and/or expanded by bad governance. Additionally, the analysis also makes clear that the high tax burden for acquiring other currencies, particularly US dollars, are in no way taking away the distrust in these institutions to safeguard purchasing power and to allocate capital adequately.

The implications of this found significant relationship are dependent on the actor's attitude towards Bitcoin. This attitude can differ for the public and private sector. For the government and correspondingly, the Central Bank of the Argentine Republic: "a self-administered National Government entity" (BCRA, 2021), it seems not to be not an objective to promote Bitcoin, which is for example reflected by the 2019 policy to forbid Bitcoin obtainment through credit cards (Martin, 2019). This attitude is not that peculiar since many authors identify Bitcoin's potential threat to the current fundamental aims and operations of central banks (Niepelt, 2016; Heller, 2017; Atici, 2018). In this sense, a more prominent position of Bitcoin within the financial system of Argentina conflicts with a primary power and function of the central bank, which is to "regulate the amount of money and interest rates, and to regulate and steer lending" (BCRA, 2021). With regard to Bitcoin as an integral part of the Argentinian economy, regulating interest rates and lending is much more difficult and controlling money supply is merely impossible, so the Argentina central bank would only give away some of its power and responsibilities, ultimately leading to shrinkage of the institution. Therefore, the results of this analysis could provide them with empirical backing to counter inflation more intensively. This would not only prevent an even larger shift to Bitcoin, meaning less ground for the existence of the central bank, but also it would logically be at the benefit of the Argentinian

people who continue to suffer from severe inflation. Still, combating inflation is not a new advice for the central bank, as their current primary objective is to execute a plan of anti-inflationary policy, with a target of 0% growth of the monetary base (BCRA, 2021). One could state that limiting inflation gets more unmanageable by every year the problem persists, as the longer the Argentinians are confronted with severe value depreciation, the less there exists a belief that it will ever get fixed and the more they feel prompted to acquire other (digital) currencies, weakening the value of the peso even more – a downward spiral. Perhaps then, a more favorable attitude towards Bitcoin by these institutions is not so irrational, given that Bitcoin, considering the results from the analysis, could help to achieve the first goal that the central bank has listed as their main purpose: "monetary and financial stability, employment, and economic development with social equality (BCRA, 2021).

Additionally, for the private sector the finding of a significant association is relevant since it provides empirical grounds for the founding of new crypto-businesses (e.g. exchanges & crypto-education/knowledge providers) and the integration of crypto within current companies (e.g. vendors & e-commerce platforms) in times of inflation within the local currency. According to a poll of the central bank (Nessi, 2021), as well as to the respondents of this study, inflation is not expected to diminish any time soon. As Bitcoin usage seems to increase along with continued inflation, it is reasonable to suspect that the demand for Bitcoin-related (financial) products and services also rises. Furthermore, in their part, the private sector could play a big role in extending Bitcoin's function of storing value towards a more general means of exchange, as wider acceptance in markets will likely lead to more Bitcoin transactions (Krause, 2016).

Concerning the latter, that Bitcoin already embodies the store of value role in Argentina, is another main finding of this thesis that again offers empirical support for similar claims of Moreno, (2016) and Cifuentes, (2019). The analysis made evident that it's perceived less worrisome to save value on the long-term in a highly volatile Bitcoin, than to do this in the local currency which has a history of losing value and is expected to continue to do so. Furthermore, many respondents make clear that for them, Bitcoin is taking over the historic role of the US dollar to safeguard value as it has some advantages over this currency (e.g. being less affected or even unaffected by capital controls, taxation and (dollar)-inflation).

For regulators, the implication of this finding is not so different from the already discussed ramification of the significant correlation between perceived inflation and Bitcoin usage (intention). Secondly, civil society could utilize the insights following from this result to promote and explain Bitcoin to particularly the less technologically advanced, so that they also learn Bitcoin's function of a saving object that hedges against inflation. The same goes for the private sector, which could seek to provide more convenient ways to store value in Bitcoin, for example by offering services that periodically convert and save a part of the consumer's income or capital in Bitcoin automatically.

About 75% of the respondents indicated that Bitcoin is used to save value and to hedge against peso devaluation, which is convincingly more than the amount of respondents that subscribed to the vehicle currency role (+/- 25%). Interestingly, that also sets Argentina apart from the co-Latin American and inflation indulged country; Venezuela. In Venezuela, "Bitcoin is being used not as a store of value endpoint, but as a channel on the road to obtain more stable currencies such as the US dollar, Colombian peso, Chinese yuan and various stablecoins" (Ahlborg, 2020). Probably, this dissimilarity is explained by the fact that informal networks fulfilling services to acquire hard currencies are already deeply rooted within Argentina's economic context, and there is less need for a Bitcoin alternative to facilitate this (Ahlborg, 2020). Still, although perhaps a secondary role, Bitcoin seems to be also used as a vehicle currency that bypasses capital controls according to this analysis, either as a way to transfer value in and outside of the country (e.g. remittances), or to facilitate currency exchanges inside Argentina. Furthermore, the vehicle currency role could gain importance if regulators decide to intensify enforcement of the already illegal cuevas. This is more plausible then cracking down on Bitcoin facilitated exchanges, as the physical locations of cueva's could be tracked down more easily (as opposed to online peer to peer transactions). However, as reflected in the findings, it's probably more appropriate to relate the vehicle currency role to the low degree of financial openness in the country, whereas the store of value role more directly links to inflation.

For the regulators, this finding signifies that traditional capital control schemes are obsolete – not sufficient anymore at controlling the peso exchange rates and discouraging the outflow of the local currency, as there is now a way to circumvent these restrictions. Furthermore, for citizens and civil society in Argentina and beyond, this finding could raise awareness about the utilization of Bitcoin for currency exchanges, which has provided a solution for early Argentinian Bitcoin adopters that circumvents capital control measures.

Interestingly, the analysis also reflected that Bitcoin has not been the sole instrument for evading inflation, as stable coins like Tether and DAI were mentioned to perform the two Bitcoin roles just as adequately, in some cases perhaps even more satisfactory. Because stable coins are tied to hard currencies like the US dollar, they are not subject to substantial price fluctuations while also being unhindered by capital control regulation when storing value or facilitating currency exchanges. This insight demonstrates that the analysis was also limited in terms of accounting for other cryptocurrency, since the whole survey design was centered around Bitcoin. Still, as drawn from the results, specifically stable coins that have a hard currency tie are also applicable in the Argentinian inflationary context and future research could consider their proportion in circumventing inflation as opposed to Bitcoin both in Argentina and beyond.

Another remarkable finding from the content analysis, as before mentioned, entails the distrust of Argentinians in their own institutions, and their desire to find ways to isolate themselves

from the grip these institutions impose. This distrust is perhaps the main theme behind the analysis, and it involves both the enormous skepticism towards the Argentinian peso, and the wariness towards the underlying authorities that enforce this currency. Presumably, this is the product of a long history of the government's economic mismanagement and monetary indecisiveness (Bailey, 2016). Bitcoin, whether a store of value or vehicle currency, represents a financial unit with which Argentinians can detach themselves from the woes induced by their regulators. In this sense, aside from being valued because of the ability it provides to bypass capital controls, to hedge against inflation and to shield from sudden drastic monetary policy, it also embodies a sort of ideology of decentralism and individual sovereignty that is widely appealing for those perceiving that their own financial freedom has been enormously restrained by central institutions. In this respect, it financially empowers the citizens while also being an almost symbolic way to protest, perhaps for some even to 'revolt', against the central powers.

Still, despite the fact that regulators could never fully control Bitcoin, it remains to be seen if Bitcoin stays as "free from the government" as it is perceived by the respondents from this analysis. Regulators could, perhaps even 'should' – if Keynesian guidelines to manipulate the aggregate demand through monetary policy are seen as cornerstone – step up the regulation for instance by banning exchanges, or by establishing (and enforcing) similar quotas and taxes for peso to crypto trades as is implemented now for exchanges against the US dollar. If then, Bitcoin is as future-proof as believed at providing an escape from this financial system overseen by regulators, has yet to be determined. Nevertheless, this thesis shows that contemporarily, Bitcoin's significance should not be underestimated, as aside from its speculative features, it can play an enormously disruptive role in specific circumstances. Argentina's 'perfect storm' of a troubled economic history, substantial inflation and a heavily regulated capital market, is a testament to that.

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Appendix:

7.1 What is Bitcoin

For the purpose of providing a general overview about Bitcoin: Bitcoin is in essence an electronic cash that works purely peer to peer, hereby bypassing the need for third parties – financial institutions – to facilitate financial activity (Nakamoto, 2008). The record of all Bitcoin transactions are being kept on the Blockchain – the decentral technology on which Bitcoin functions. To maintain this ledger, individual nodes can join and support the completely open-source network, only an internet connection is needed to access the Blockchain. New Bitcoins are minted by the process of mining, which is done via computing power. The miners mine blocks in which Bitcoin transactions are embedded, hereby facilitating the payment system, while also receiving Bitcoin as a reward for the work (Velde, 2013). The amount of Bitcoin included in the reward, halves roughly every four years and therefore the total amount of Bitcoin ever to come in existence is predetermined at 21 million (Quartz, 2013). The gradual decreasing supply of Bitcoin to a point where additional supply is completely absent and even impossible, makes this monetary system free from inflation (Nakamoto, 2008).

Since the rise of Bitcoin started in 2009, it has become observable that other cryptocurrencies also have entered the stage. The fact that Bitcoin is an open-source project makes it relatively easy for others to copy the protocol of Bitcoin and rewrite the code to obtain different desired outcomes from the blockchain (Bjerg, 2016). All of these cryptocurrencies vary in their properties and purposes, and some do not even function as a form of money. For example, Ethereum, the cryptocurrency with the second most market capitalization (Coinmarketcap, 2021), is essentially a protocol that provides a blockchain which functions as “the ultimate abstract foundational layer”, on which anyone can employ smart contracts and other decentralized applications (Buterin, 2013). Ethereum can therefore be used for monetary purposes, but this does not involve a primary objective, contrary to Bitcoin. It is however worth noting that Bitcoin remains the single most popular cryptocurrency, as is also reflected in its share in the total market capitalization for cryptocurrencies, which at the moment of writing is 42% (Coinmarketcap, 2021). The fact that Bitcoin was the first cryptocurrency and therefore has acquired the largest network effects and popularity, constitutes the primary reason why it is selected as the main variable in this thesis. This is also because Bitcoin uses the blockchain technology for monetary purposes – as supposed to cryptocurrencies that have other aims – which therefore fits in the context of the thesis.

Broadly speaking, Bitcoin has piqued the interests of scholars on three main terrains for further examination (Márquez, 2018); the aspect of legislation (1); technological development (2); and its value proposition (3). In the literature review of this thesis, only the second terrain is not

comprehensively explored, as these technological aspects are also intertwined in both the other two Bitcoin research areas, making it also suitable to address them there instead of looking into them distinctively.

7.2 Economic background Argentina

When considering the Argentinian case for Bitcoin, it is helpful to first have a general overview of the country's economy. With a population of approximately 45 million, the country attains a Gross Domestic Product (GDP) of roughly 400 billion US dollar, hereby constituting the third largest Latin American economy (World Bank, 2021). Strikingly, about one-third of the country's population lives below the national poverty line (World Bank, 2021), signifying that Argentina is still dealing with a considerable amount of underdevelopment. Furthermore, Cifuentes, (2019) classifies Argentina as a "financially distressed" country, which is mostly reflected by the significant amount consumer prices rise every year – inflation.

Notably, when considering its economic history, Argentina once was a very a prosperous country, ranking in the top 10 wealthiest nations around 1900 and with both the ambition as the optimism to strengthen this economic position even further, driven by the continuously inflowing European immigrants (Bailey, 2016). Argentina could reap the fruits from the era of globalization and free trade before the First World War, as they were and still are endowed with natural resources – particularly agriproducts were exported in great volumes. The period after the First World War however, initiated a new standard with regard to global trade, diverging from economic liberalism, which hurt Argentina's export-focus significantly and exposed its neglected industrial sector (Bailey, 2016). As a consequence, since the 1930's there can be observed a focus on industrialization as the main component for economic growth (Peralta-Ramos, 2019). However, class struggles and political transformations with regard to specific industrial development plans have been undermining the proper advancement of an internationally competitive industrial base, while also being the root cause for the remaining social and economic unrest within the country (Peralta-Ramos, 2019). Most notably was Argentina's shift to a severe form of corporatism in 1946 – "Peronism" (under Juan Perón's administration) – with which there was sought to develop industry via protected state enterprises and a large degree of government intervention to allocate resources (Bailey, 2016). However, in contrast with the more successful "developmental states" like Taiwan and South Korea that pursued similar forms of state-led development, Argentina's development plan did not come to fruition. The literature provides several different reasons for this, including the mismanagement of state-enterprises, which were mostly run by unexperienced politicians instead of specialists (Singerman, 2015). But also, Peronism entailed an overreliance on import substitution (Bailey 2016), a neglect for the preservation of a competitive agricultural sector in favor of funds flowing towards

industry (Calvert, 2021), and an economy that was too shut off from the global market (Bailey, 2016).

In a subsequent period of liberalization of the Argentinian economy, the uncompetitive and inefficient nature of the protected Argentinian industrial sector was exposed as it was unable to contend with its foreign counterparts (Bailey, 2016). After a long period of economic stagnation, Buenos Aires decided to peg their currency to the US dollar in the 1980's, in order to attempt to diminish inflation and to lower the relative costs of imports through the appreciation of the Argentine peso. However, the negative impact on exports was greater than estimated, and because the economy was also hurt by continued corruption stemming back from the period of Peronism, Argentina entered a deep crisis in the late 1990's (Bailey, 2016). As both foreign and domestic investors lost their trust in Argentina, capital was fleeing the country and the state was forced to default on their loans in 2001, when also the currency peg was removed.

Against this background, the Argentinian economy has slowly picked up again in spite of continued inflation, as the broken tie with the US dollar caused another devaluation of the peso, hereby driving exports. Besides, the growing demand for commodities suits the Argentine economy (Bailey, 2016), which is still largely dependent on the extraction and export of its extensive amount of natural resources in energy and agriculture (World Bank, 2021). Furthermore, the industrial sector is definitely not meaningless, as it has been a major contributor to the GDP (23,41% in 2019), a significant source of employment (21,04% in 2019) (World Bank, 2021), and it is crucial for the transformation of raw foodstuff from the countryside towards processed agricultural end-products ready for the national market or export, particularly by grinding and canning (corn) flour, and by packing meat[20]. The high employment rate within the industrial and service sectors might explain the relatively high degree of urbanization in Argentina – about 92% of the citizens live in urban areas (World Bank, 2021).

7.3 Translation process

To ensure that more Argentinians are able to participate and the burden of language is not going to hinder potential participants from responding to the survey, the questionnaire is also translated to a Spanish version (in addition to the English version). Participants could manually select the language they wanted to view the questions in at any time during the survey. As Van Nes et al., (2010) and Ho, Holloway & Stenhouse (2019) stress the importance of enhancing transparency with regard to the translation process for the trustworthiness of qualitative research, is important to note that a translator is used to translate the survey questions from English to Spanish. As the role of this

[20] The Observatory of Economic Complexity provides an in-depth visualization of Argentina's exports, found on https://oec.world/en/profile/country/arg

translator is so influential for the collection of data and, consequently, the amount of bias in the results, Squires, (2009) recommends to assess and mention the credentials of the translator in order to enhance the trustworthiness of the research project. Therefore, it is important to note that the translation is carried out by an Argentinian resident who with her university degree in psychology has had much experience with both the English and Spanish language in social research, making her an adequate choice for creating the Spanish version despite the fact that she has not been professionally translating before.

Aside from the translated questions in the survey, for the participants who answer the open questions in Spanish, the response data has to be translated to English again. This poses a significant limitation to the study, as in the process of translating data, the specific linguistic meaning could get lost (Van Nes et al., 2010). However, the negative impact on the robustness of the findings in this research should be limited, as in content analysis small linguistic nuances have less an effect on the results as would be the case for methods like discourse analysis. Translating the Spanish open question data has been done partly by the usage of online translation tools, which enables the researcher to instantly transform from Spanish to English, which is extremely useful for this particular research despite the fact that minor translation errors from automatic translation programs, like that of Google, are undeniable (Zahro & Irham, 2018). Therefore, the researcher continues cooperation with the translator to help translate certain data in which the translation tools' translations are not sufficiently reflecting the specific meaning of the content. Following another guideline by Squires, (2009) concerning transparency about the exact role of the translator, there must be emphasized that the translator only directly translates the questions the researcher created, and assists where this is required in translating the open question answers, therefore not being involved in any other way with the process of the research project.

Table containing data of 46 countries (proposition 1)

Political entity	Inflation (CPI)	Bitcoin usage (LocalBitcoins trading volume)	GDP per capita	Population (total)	Internet usage (percentage of population)
Argentina	**53.54830435**	1758.452047	9729.141574	44938712	93.1
Australia	1.610767873	4991.907216	57071.1683	25364307	86.5
Brazil	3.732976212	2967.631166	11121.73992	211049527	70.7
Canada	1.949269024	3030.517136	51588.76144	37589262	92.7
Chile	2.557544757	2134.697172	15091.45051	18952038	77.5
Colombia	3.525492736	20799.19886	7842.915524	50339443	65.00690072
Croatia	0.771820346	25.17229738	16454.45395	4067500	79.07978368
Czech Republic	2.847875959	71.96529282	23833.52301	10669709	80.86694441
Denmark	0.758131573	111.9605408	65147.42718	5818553	98.04643475
Dominican Repub	1.81060377	875.3672525	8005.108444	10738958	61.1
Egypt, Arab Rep.	9.37233333	198.2657929	3008.842353	100388073	57.28286878
Eurozone	1.445667015	18165.89036	41387.56799	342597698	87.7
Hong Kong SAR, C	2.864927988	3143.067262	37957.06844	7507400	91.74340039
Hungary	3.338586354	37.08057996	17466.03244	9769949	80.37169361
India	7.659694743	10726.48065	2169.140185	1366417754	40.6
Indonesia	3.03058665	1000.91689	4450.7245	270625568	47.69064898
Iran	39.90734557	969.2298805	5529.832354	82913906	80.5
Japan	0.476973684	132.4423365	49187.83309	126264931	93.8
Kazakhstan	5.245476796	830.8138348	11518.35823	18513930	81.87762554
Kenya	5.11583333	3673.036031	1237.497499	52573973	22.56511937
Malaysia	0.662891866	3652.679909	12478.21226	31949777	84.21322418
Mexico	3.635961421	2981.393722	10275.63404	127575529	70.06991047
Morocco	0.196065521	720.3249848	3450.295255	36471769	74.37631447
New Zealand	1.619631902	1221.957463	38992.97446	4917000	90.8
Nigeria	11.39679497	27052.94422	2386.871765	200963599	61.2
Pakistan	10.57803047	2048.75668	1185.456771	216565318	17.07090203
Peru	2.137153426	7162.082132	6486.634618	32510453	59.9505036
Philippines	2.480278587	684.713518	3337.68201	108116615	43.02661187
Poland	2.227478809	633.3356024	17386.87936	37970874	84.51645192
Romania	3.827854326	1229.867193	12131.42223	19356544	73.65748258
Russian Federatio	4.470366608	114380.2901	12207.65733	144373535	82.64216187
Saudi Arabia	-2.093333333	2098.502935	20542.164	34268528	95.7247356
Singapore	0.565260569	1886.470852	58829.63537	5703569	88.94925269
South Africa	4.124350725	7635.431156	7345.962418	58558270	55
Korea, Rep.	0.382946132	608.9433919	28605.73201	51709098	96.15758265
Sweden	1.784150974	3494.423225	57975.07713	10285453	94.49344341
Switzerland	0.362916005	190.4335753	79406.65761	8574832	93.14608695
Tanzania	3.464	403.941597	956.4986364	58005463	38.7
Thailand	0.706728601	4782.27891	6502.647476	69625582	66.65241317
Turkey	15.17682157	563.2803325	14998.97619	83429615	73.97670403
Ukraine	7.886717456	4673.17114	3053.655195	44385155	93.4
United Arab Emira	-1.931081148	1786.525035	41420.48303	9770529	99.14999796
United Kingdom	1.738104601	22217.38873	43688.43745	66834405	92.51662855
United States	1.812210075	45142.15058	55670.23571	328239523	89
Vietnam	2.795823675	279.5066051	2082.243694	96462106	68.7
Venezuela	19910	50132.82026	2459.686513	28515829	64

Hypothesis 1, Model 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Std. Error of the Estimate
1	,513[a]	,263	,209	.7044493353	.7007956389

a. Predictors: (Constant), Population log corrected, Inflation (CPI), onLogcorrected, Internet penetration

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,256	3	2,419	4,874	,005[b]
	Residual	20,346	41	,496		
	Total	27,602	44			

a. Dependent Variable: Bitcoin usage log corrected

b. Predictors: (Constant), Population log corrected, Inflation (CPI), Internet penetration

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3,531	1,874		-1,884	,067
	Inflation (CPI)	-,007	,011	-,082	-,599	,553
	Internet penetration	,008	,006	,201	1,329	,191
	Population log corrected	,811	,214	,584	3,791	,000

a. Dependent Variable: Bitcoin usage log corrected

Hypothesis 1, Model 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,520[a]	,270	,197	.7097691955

a. Predictors: (Constant), Population log corrected, Inflation (CPI), Internet penetration, GDPperCapitaLogcorrected

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,451	4	1,863	3,698	,012[b]
	Residual	20,151	40	,504		
	Total	27,602	44			

a. Dependent Variable: Bitcoin usage log corrected

b. Predictors: (Constant), Population log corrected, Inflation (CPI), Internet penetration, GDPperCapitaLogcorrected

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4,291	2,249		-1,908	,064
	Inflation (CPI)	-,004	,012	-,047	-,319	,752
	GDPperCapitaLogcorrected	,248	,398	,165	,623	,537
	Internet penetration	,003	,010	,070	,271	,788
	Population log corrected	,827	,217	,595	3,809	,000

a. Dependent Variable: Bitcoin usage log corrected

Hypothesis 1, Model 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,557[a]	,310	,261	.6991294154

a. Predictors: (Constant), Population log corrected, Inflation (CPI), Internet penetration

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9,541	4	2,385	4,840	,003[b]
	Residual	20,205	41	,493		
	Total	29,745	45			

a. Dependent Variable: Bitcoin usage log corrected

b. Predictors: (Constant), GDPperCapitaLogcorrected, Inflation (CPI), Population log corrected, Internet penetration

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4,351	2,216		-1,963	,056
	Inflation (CPI)	9,294E-5	,000	,335	2,510	,016
	Internet penetration	,002	,009	,041	,174	,863
	Population log corrected	,817	,213	,567	3,843	,000
	GDPperCapitaLogcorrected	,296	,365	,194	,811	,422

a. Dependent Variable: Bitcoin usage log corrected

Reliability Statistics

Cronbach's Alpha	N of Items
,843	2

Reliability Statistics

Cronbach's Alpha	N of Items
,797	2

Proposition 1, Model 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,535[a]	,286	,261	,73978

a. Predictors: (Constant), PerceivedInflation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6,143	1	6,143	11,224	,002[b]
	Residual	15,324	28	,547		
	Total	21,467	29			

a. Dependent Variable: BitcoinUsageIntention

b. Predictors: (Constant), PerceivedInflation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,405	,601		4,002	,000
	PerceivedInflation	,454	,136	,535	3,350	,002

a. Dependent Variable: BitcoinUsageIntention

Proposition 1, Model 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,694[a]	,481	,398	,66758

a. Predictors: (Constant), Have you ever bought or sold Bitcoin?, What's your age?, What's your gender?, PerceivedInflation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10,325	4	2,581	5,792	,002[b]
	Residual	11,142	25	,446		
	Total	21,467	29			

a. Dependent Variable: BitcoinUsageIntention

b. Predictors: (Constant), Have you ever bought or sold Bitcoin?, What's your age?, What's your gender?, PerceivedInflation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,061	1,246		-,049	,961
	PerceivedInflation	,505	,132	,594	3,822	,001
	What's your gender?	-,335	,373	-,135	-,898	,378
	What's your age?	-,079	,136	-,092	-,583	,565
	Have you ever bought or sold Bitcoin?	1,487	,496	,439	2,999	,006

a. Dependent Variable: BitcoinUsageIntention

Survey answers to open questions

Please note, not every respondent answered to the open questions and some did only partly. The text-sections between [ ]- marks are the translated English version of the original Spanish version

Respondent 1:

Q1

I agrew with these statements due to my experience. Concerning Argentina, people who bought bitcoin in 2018 at the maximum price of USD19000 have still make more money than if they had held on to the argentinian currency during that period.
Also, due to restrictions implemented in the last year, bitcoin (and other crypto) have become one of the only (if not the only) methods to transfer money outside of the country

Q2

The argentinian currency decreases in value every day. Due to this, people buy US dollars, which you can do from your own bank. These USD come from the central bank reserves, which have been decreasing in the last months and so they have applied restrictions for buying them. Bitcoin is still unregulated and easily accessible for most people and so in the last months a lot of people became interested in it, both as a mean to save aswell as a vehicle currency for transfers.

Q3

Lately people are more interested in Bitcoin and stablecoins (the most accesible one is DAI) because of the amount you can buy and the few restrictions it has, even when buying from regulated

Respondent 2:

Q1

I partially agree with the second statement.
Regarding the first, I personally know that BTC is not a stable coin. Therefore, it may or may not hold its value in the long run. That's why in Argentina dollar-linked coins such as DAI, USDC or USDT have become somewhat popular, seeing as they're perceived as digital dollars. I believe these stable coins are more widely used than BTC for national and international payments, partly because people can use them freely (no government regulation or interference) and partly because BTC owners generally prefer to hold on to them hoping the price will increase.

Q2

I began hearing about BTC about 3 years ago. My dad introduced me to them. He found out about them by chance and was attracted to them, in the first place, because he saw how much the price had increased in only a few years. Besides that, he also considered favorably the possibilities that BTC offers since it's anonymous and can't be affected by measures taken by our pathetic government (as of now if we want to buy dollars legally we can only get 200 per month and we have to pay an extra 75% in taxes).

Q3

I believe that dollar-linked coins will become popular soon enough, since it's the only way we can make payments freely. As for BTC, I also think it will be more widely known, yet not many people will be interested in it because it's so muc more expensive and riskier than DAI, USDC or USDT

Respondent 3:

Q1

I use bitcoin as store of value because of the arg peso devaluation. I buy p2p

Q2

yes , because the AFIP (institution that control money and posessions of people) is pressing people all the time about what they spend with credit card or buy

Q3

if politicians Keep being comunist the btc usage will increase

Respondent 4:

Q2

Given the current situation, where people cannot travel, I think it's used more as a store of vakue

Respondent 5:

-

Respondent 6:

Q1

I completely agree with the staments above. I think BTC (and cryptos in general) are a huge new world that allows people escape from the socialists and corrupts goverments. Here in Argentina, it´s really really difficult to improve your financial status, the politicians are the worst and argentinian peso loses strength as a currency every single day.

Q2

Basically, as a 23-year-old guy from Argentina is so sad to see that we don´t have any future here. The corruption has been spread all over the political system. Every goverment just want to win the elections to get benefits for themselves. Crytpos give us the possibility to escape the barriers to get other currencies and escape from the peso.

Respondent 7:

Q1

My experience relates with both of the use cases described above. I use it mainly as a store of value in combination with other assets. But also value it's ability to be used both locally and internationaly as a method of exchange that cannot be suddenly restricted or suppressed by overnight goverment policy (very common in our country).

Q2

At first I was atracted to Bitcoin mainly by its concept and technology implications. Mostly as game or an experiment. In time, as Argentinian inflation, political turmoil and continuous sudden changes in economic policy have turned the main currency into something only usable for everyday immediate expenses or purely speculative investment, Bitcoin started to look more and more as a viable and practically convenient alternative to store value and use it freely, specially in a context in which the other options and traditional ways of 'doing business' are getting more restricted by the day.

Q3

The most valuable use case of BTC in Argentina, in my opinion is it's ability to not be regulated easily and therefore less of a subject of arbitrary sudden government policy. This use case which is a theoretical advantage in many places (as stability is provided by law, tradition or a stronger ballance of power within the republican system) in Argentina is an actual necessity, and citizens are in constant search of alternatives to solve this pervasive issue.

Respondent 8:

Q1

In my case the "store of value" role applies partially, although not for much time due to its own volatility. I don't use it to exchange pesos to foreign currencies.

Q2

Inflation is chronic in Argentina, so the "store of value" role of Bitcoin applied in every single year since at least 2011/2012 when BTC became available.

Respondent 9:

-

Respondent 10:

-

Respondent 11:

Q1

Bitcoin es demasiado volatil y eso es un problema. Para muchos de Argentina, usan bitcoin para guardar el poder adquisitivo de la moneda. Pero al mismo tiempo que el bitcoin sea volatil, resta puntos de reputación. Esto ha sido corregido con la aparición de las stable-coins, como el USDT, que son resguardo de valor, y al mismo tiempo no son volátiles (en comparación al bitcoin). [Bitcoin is too volatile and that is a problem. For many from Argentina, they use bitcoin to save the purchasing power of the currency. But at the same time that bitcoin is volatile, it subtracts reputation points. This has been corrected with the appearance of stable-coins, such as USDT, which are safeguards of value, and at the same time are not volatile (compared to bitcoin)]

Q2

Argentina posee una inestable política económica y social, lo que produce que el valor de nuestra moneda soberana pierda valor mes tras mes. Por este motivo, los ciudadanos argentinos necesitan resguardar el valor de sus ahorros en moneda fuerte como el dólar americano, sin embargo, el gobierno de este país ha salido a cobrarle impuestos a quienes quieran comprar dólar americano, y por esta última razón, la población argentina ha salido a buscar comprar criptomonedas, telther y bitcoin principalmente.[Argentina has an unstable economic and social policy, which causes the value of our sovereign currency to lose value month after month. For this reason, Argentine citizens need to protect the value of their savings in hard currency such as the US dollar, however, the government of this country has come out to collect taxes from those who want to buy US dollars, and for this last reason, the population Argentina has gone out to buy cryptocurrencies, telther and bitcoin mainly.]

Q3

Argentina necesita que una empresa internacional que no responda a las políticas del gobierno, emita tarjetas que permitan consumir en criptomonedas. [Argentina needs an international company that does not respond to government policies to issue cards that allow cryptocurrencies to be consumed.]

Respondent 12:

Q1

I use it to protect my earnings against inflation. Inflation is expected to be 3 digits in the next two years. We don't trust in our currencies.

Q2

No, particularly interesting no. It happens to be a way to try to not to lose money.

Q3

People don't understand and the adoption rate is very low. It is relegated to the technological part of society, it's a geeks thing for a lot of people

Respondent 13:

Q1

In my opinion, its both things. Primarly a store of value due to its intrinsic characteristics. The whole world is slowly starting to make a transition. Adoption is inminent

Q2

Because our local currency loses value each day. The grand majority of politicians are scam-artists, so trusting them is not possible. In fact the whole world system will experience an inevitable collapse. This is mainly the reason, aside from that its a great store of value. Bitcoin is the greatest social experiment that has existed

Q3

Store of value

Respondent 14:

Q1

both

Q2

impuestos, corrupcion, inflacion, limitacion a la compra de divisas [taxes, corruption, inflation, limitation on the purchase of foreign currency]

Respondent 15:

Q1

reserva de valor. Para pagos, hay problemas con las fees y la demora de transacción. También de privacidad. Hay altcoins que son mejores en ese sentido, por lo menos hasta que se solucione ese problema en bitcoin [store of value. For payments, there are problems with fees and transaction delay. Also privacy. There are altcoins that are better in that regard, at least until that problem in bitcoin is fixed.]

Q2

por la inflación, devaluación del peso y por la dificultad de adquirir dólares. [due to inflation, devaluation of the peso and the difficulty of acquiring dollars]

Respondent 16:

Q1

Si comparto totalmente, a su vez sostengo que su incorporación nos permitirá una adaptación benéfica a la economía descentralizada.[If I fully share, in turn I maintain that its incorporation will allow us a beneficial adaptation to the decentralized economy]

Q2

Por el impacto que está siendo en los países subdesarrollados ha sido notorio y sostengo que su incorporación hará denotar un paso importante.[Due to the impact that it is having in underdeveloped countries, it has been notorious and I maintain that its incorporation will mark an important step]

Respondent 17:

Q1

Si. El primer motivo de adquisición fue para su uso a futuro (apostando a un aumento de su valor ?)

Después, con el tiempo, su uso como "moneda" para la adquisición de bienes y servicios [Yes. The first reason for acquisition was for future use (betting on an increase in value?)

Later, over time, its use as "currency" for the acquisition of goods and services}

Q2

Bitcoin obtuvo mí interés independientemente de las políticas y circunstancias del país. [Bitcoin got my interest regardless of the policies and circumstances of the country.]

Q3

Está en crecimiento pero con el foco de atencion desviado. Aún así es la forma que se encontró para darse a conocer [It is growing but with the focus of attention diverted. Still it is the way he found to make himself known.

Respondent 18:

Q1

bitcoin is the best asset in the world for reserve of value, this aspect combined with hyperinflation and very bad economic management of central bank, makes me want to save my assets in bitcoin instead of any kind of fiat money.

Q2

50%/year inflation, prohibition of foreign currency acquisition, import goods ban.

Respondent 19:

Q1

Uso bitcoin para escapar los controles de capitales ya que trabajo para una empresa del exterior. También como un medio de ahorro para evitar el peso y su hiperinflación. [I use bitcoin to escape capital controls since I work for a foreign company. Also as a means of saving to avoid the peso and its hyperinflation.]

Q2

Tenemos que entrar en las nuevas eras del indiviuo soberano y destruir los paieses con sus superpoderes como los conoceos ahora. [We have to enter the new eras of the sovereign individual and destroy the countries with their superpowers as we know them now]

Respondent 20:

-

Respondent 21:

Q1

Sieve para ambos motivos. Con respecto a la inflación no solo sirve para el peso sino para el dólar de eeuu [Sieve for both reasons. Regarding inflation, it not only works for the peso but for the US dollar

Q2

En argentina estamos acostumbrados a la inestabilidad de la moneda y Bitcoin no nos asusta [In Argentina we are used to currency instability and Bitcoin does not scare us]

Respondent 22:

Q1

Debería ser un medio de intercambio pero las altas comisiones y no aumentar el tamaño del bloque lo impiden [It should be a medium of exchange but the high commissions and not increasing the size of the block prevent it

Q2

No es solo por cuestiones políticas es solo lógica [It is not only for political reasons it is only logical]

Respondent 23:

Q3

Viva Peron

Respondent 24:

Q1

Se relaciona mucho mas con la primera. La segunda es un beneficio que obtengo del uso del btc [It is much more related to the first. The second is a benefit that I get from using btc]

Q2

Porque en pesos argentinos es simplemente imposible ahorrar. Y el dolar, el cual no te genera beneficio mas que no perder dinero con la devaluacion del peso, tampoco se puede comprar debido a las restricciones del gobierno.
Y quienes tienen permitido comprar legalmente, no pueden hacerlo por mas de 200USD/mes y con un 65% de impuestos [Because in Argentine pesos it is simply impossible to save. And the dollar, which does not generate a profit for you other than not losing money with the devaluation of the peso, cannot be bought either due to government restrictions.And those who are allowed to buy legally, cannot do so for more than 200USD / month and with 65% taxes.

Respondent 25:

Q1

I believe it's true that bitcoin is used as escape from inflation but also it's a way to avoid corruption. Argentina + banks don't have a good relationship.
I don't used it to transfer value to other countries.

Q2

Well, Argentina had 5 "signos monetarios", and with devaluation bitcoin is a good future investment. In the community it's usually common to say " invest what you are willing to lose".

Respondent 26:

Q1

lo uso como reserva de valor y en menor medida para garantizar mi anonimato [I use it as a store of value and to a lesser extent to guarantee my anonymity]

Q2

creo que sobre todo por la inflación. El país necesita también una reforma tributaria ya que el sistema actual no es justo y genera que muchos busquen en bitcoin una forma de escapar a los mismos. Pero no creo que haya que erradicar los impuestos [I think mainly because of inflation. The country also needs a tax reform since the current system is not fair and causes many to seek in bitcoin a way to escape them. But I don't think taxes should be eradicated]

Respondent 27:

Q2

Permite fácilmente saltar los controles de capitales.[It allows you to easily skip the capital controls]

Respondent 28:

-

Respondent 29:

-

Respondent 30:

-