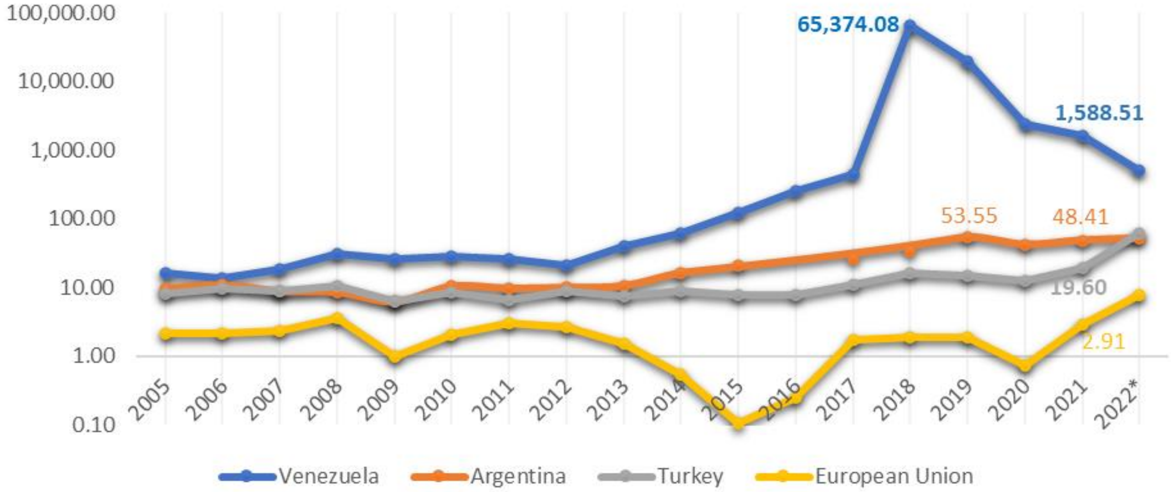
The adoption of cryptoassets in developing countries suffering from hyperinflation

Clément LANDORMY – scientific contributor from chair EFNUM

Argentina, Venezuela, and Turkey are developing countries with many striking similarities, chief among them high inflation. Venezuela has experienced an average inflation rate of 3,711% since 1973, reaching its apex at 65,374% in 2018 (Figure 1). The national currency, the Bolivar, became a worthless piece of paper deprived of its functions as money (Medium of exchange, Store of value, Unit of account). Although the inflation rates in Argentina (≈20%) and Turkey (≈10%) are, on average, significantly lower than in Venezuela since 2005, they are still much higher than in the European Union (≈2%), where the inflation rates are at more sustainable levels (Figure 1). It implies that the Turkish lira and the Argentine peso are still used as means of exchange and units of account in their respective country, contrary to the Bolivar but are unreliable stores of value. Eventually, the global price surge in 2021 and 2022 due to the consequences of the covid-19 crisis and the Ukrainian war worsened a tenuous situation. The Turkish lira and the Argentine peso lost 44% and 18% of their value against the U.S dollar in 2021, respectively, while they have lost 31.9% and 32.7% so far this year until the 17 October. The depreciation of these currencies threatens their usage as payment instruments and units of account while worsening their reserve of value status. Nevertheless, these conjectural shocks affecting all countries worldwide should not overshadow these countries' structural issues. Beyond these crises, the increase in the general price level is explained by the terrible economic policies undertaken by public authorities. Some of the measures that fuelled inflation in those countries were the States' support and overreliance on specific sectors of the economy (fossil fuel industries, agricultural industry, construction and building materials sector) for tax collection, export revenue and economic growth. The large inflow of foreign currencies from these sectors appreciated the nation's currency which eroded the competitiveness of other sectors and their development (Lack of diversification caused by the Dutch disease). The government relied on these industries' revenue to finance their expensive social programmes and reckless spending sprees. Once these sectors struggled due to sanctions, mismanagement following their nationalisation or the volatility of global markets, trade deficits formed while tax revenues dwindled and were no longer sufficient to cover government spending. The budget deficits thus generated had to be financed by debts and expansionary monetary policies. The combination of money printing and trade deficits led to the depreciation of the sovereign currency and a higher inflation rate.

Figure 1 : Annual inflation rates (%) in countries experiencing high inflations with regards to the EU inflation rate



Data source: Statista, INDEC, Eurostat.

Dollarisation of the economy and regulatory crackdown

Confronted with the decline of their purchasing power and the high volatility of their national currency, the population turned to a more reliable currency, the U.S dollar. In Venezuela, it has become common practice for merchants to list merchandise and service prices in U.S dollars while the bolivars can still be used at the prevailing exchange rate relative to the dollar. Similarly, Argentinian traders use the dollar as a quotation for high-value items. Nonetheless, this procedure of dollarisation of the economy is not well received by the governments of these countries. Notably, the authorities are unwilling to surrender the influence of monetary policies on the economy and the seigniorage revenue from money printing. As such, Venezuelan, Argentinian and Turkish public authorities have imposed restrictions or complete bans on foreign currency transactions and price controls to mitigate this process and limit capital flight from their country at the expense of the well-being of their citizens. In Venezuela, the State controls everything from the price of gasoline and rice to the amount of money that can be withdrawn from ATMs. In Argentina, the people have occasionally been stolen from their dollars by the government to finance government spending. These practices dampened the people's trust in public institutions and central banks, favouring the development of thriving local black markets. However, the lack of liquidity characterised by these local markets implies generally high premiums for its users. For instance, while the Venezuelan government fixed the exchange rate of a dollar at ten bolivars per dollar, the black-market exchange rate topped at 1,000 bolivars per dollar in February 2016. Accordingly, these populations turn to a more global and decentralised alternative, the cryptoassets.

Cryptoassets' appealing characteristics

Cryptoassets appeal to the population of those countries since they are censorship-resistant, accessible (populations excluded from traditional banking and financial systems due to sanctions, a lack of documentation or defiant infrastructures), and international, implying that their government can no longer exclude them from participating in the global economy. Meanwhile, the immutable, open-source and decentralised nature of their Blockchains enables transactions and wallet balances to be recorded transparently without relying on an intermediary who could manipulate the transactions, take control of the cryptoassets or issue cryptoassets as he sees fit. These crypto transactions are generally cheaper and faster to process than traditional transfers since the Blockchain cuts intermediary commissions and cumbersome administrative procedures. This aspect is particularly alluring for the populations with low wages from emerging markets. Ultimately, many cryptoassets are less volatile than the national currencies of these inflation-ravaged countries, indicating that they can be employed as practical tools to hedge against high inflation and the depreciation of these fiat currencies. According to a Gemini report, individuals living in countries suffering 50% or more devaluation against the U.S dollar, such as Argentina, Turkey and Venezuela, were more than five times as likely to say that they plan to use cryptoassets compared with those who experienced less than 50% inflation over the same period. The cryptoassets of choice to face high inflation are Bitcoin and stablecoins, thanks to their low volatility compared to their peers. Bitcoin is more volatile and costly to send than stablecoins but is more secure (See: Terra Luna Crisis) and susceptible to gain in value due to its fixed maximum supply (21 million Bitcoins) and disinflationary nature (halving). Stablecoins are cryptoassets whose value is pegged to that of another asset or a basket of assets, such as a national currency or a commodity, either via reserve assets acting as collateral or through algorithmic formulas that are supposed to control supply.

The adoption of cryptoassets by the populations

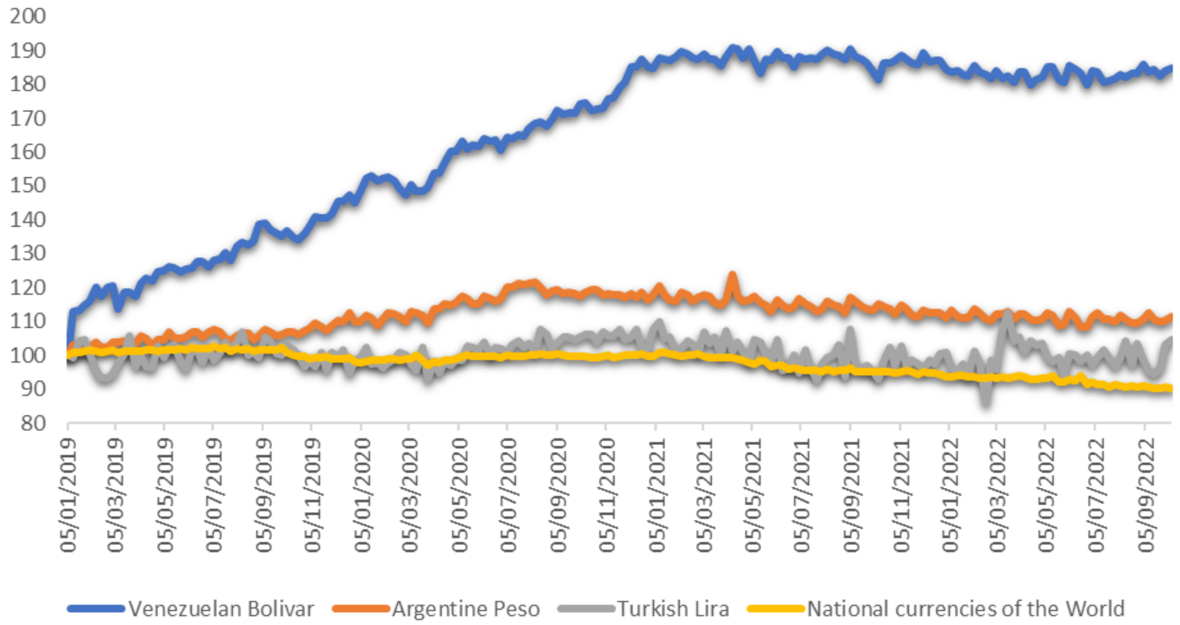
The dollar-denominated stablecoins (Tether, USD coin, Binance USD, DAI) and Bitcoin currently see the most widespread use. In Turkey, the Turkish lira began to be traded for Tether in January 2020 and has become the second-highest fiat-to-Tether trading pair since April 7th, 2020, and currently accounts for about 21% of all national currency swaps. The lira has also become the first-most traded fiat-to-Binance USD (BUSD) pair since September 2020, with about 4% of trades in October 2022. In Argentina, major crypto exchanges registered a jump in stablecoin sales by over 200% while the Argentine peso depreciated by 15% from July 2nd, 2022, the date of the resignation of Economy minister Martin Guzmán to July 7th, 2022. Fearing a further rise of inflation, a higher energy cost, and a potential default on debt, some Argentinians used DAI as collateral to obtain loans in Argentine pesos to purchase additional DAIs to hedge against an eventual depreciation of the national currency. In Venezuela, people also purchase and sell stablecoins via apps such as Reserve, a startup backed by Coinbase. To circumvent corrupt government institutions, the U.S government uses USD Coin to reach Venezuelan citizens directly thanks to an app like appsAirtm. Meanwhile, Bitcoin and Dash are traded through peer-to-peer (P2P) exchange platforms. The most popular of these platforms, LocalBitcoins, saw its weekly average volume of traded Bitcoins of 70,530 Bs.S (VES Venezuelan Bolivar) in 2019, multiplied by 100 to reach 7,285,906 Bs.S in 2021 before stabilising around 5,000,000 Bs.S (≈ $595,785) in 2022.

The popularity of P2P crypto platforms, a result of political decision making

The development of P2P platforms stems from regulatory and policy decisions hampering cryptoassets and the distrust of the people in public and private institutions. While Maduro's government states that it openly embraces cryptoassets, its policy is a testament to its desire to take control of the cryptoasset market in Venezuela at the expense of its citizens. El Petro, the sovereign digital currency backed and issued by the Venezuelan State, is employed to evade sanctions and is accepted to pay taxes to Venezuelan municipalities (305 out of 335 in 2016). The regulator of crypto activities, the Superintendencia Nacional de Criptoactivos y Actividades Conexas (Sunacrip), actively promotes this centralised digital currency's usage over other cryptoassets by imposing taxes and restrictions on crypto remittances. The few centralised crypto exchange platforms licensed by Sunacrip and authorised to operate in Venezuela are subordinated to the State. The transaction history from one crypto exchange platform (Criptolago) suggests that most of their users are well-off individuals affiliated with the regime since 75% of the total transfer volume is derived from transactions worth $1,000 or more, while the average Venezuelan earns about 72 cents daily. Thus, the Venezuelan people's mistrust of centralised platforms and the government contributed to the success of P2P platforms. In 2020, Venezuela figured as the second country for P2P trading volume in the U.S dollar weighted by purchasing power parity per capita and the number of internet users on LocalBitcoins and Paxful platforms and 6th in 2021. This trend towards P2P platforms is also observed, to a lesser extent, in Argentina and, more recently, in Turkey.

Like the Caracas authorities, Turkey's central bank started taking measures to control and stem the development of cryptoassets in Turkey. The most controversial measures were the prohibition of cryptoassets as payment instruments and the ban on digital wallet providers in April 2021. Ankara's ambition is to see banks take a central place in the crypto ecosystem by letting investors have no choice but to use banks to send/receive the Turkish Lira to/from centralised crypto exchanges. This way, the authorities can tax, audit and control all crypto transactions through these exchange platforms. Even though Turkish citizens can still buy cryptoassets to hedge against the fall in the value of the Lira, they can no longer legally be used to purchase goods and services. It eventually compels them to convert their cryptoassets back into Lira and bear the depreciation risk associated with this fiat currency before conducting any transaction. Therefore, some Turkish investors might be more inclined to trade with P2P platforms than centralised platforms to avoid the scrutiny of the state, a potential seizure of their cryptoassets, taxation and currency risks. The recent Financial Crisis and lira depreciation provoked by Erdogan's unorthodox Monetary Policy is undoubtedly stimulating the usage of P2P platforms in Turkey, diverging from the declining global trend (Figure 2) with more Turkish individuals distrusting their monetary authorities. It is the case for LocalBitcoins, which has seen its first and second quarter trading volume of 2022 coming from Turkey increase by 51% and 40% compared to the first quarter of 2021.

Figure 2: The weekly volume of national currencies traded for Bitcoins on LocalBitcoins in logarithm, base 100 (05/01/2019)



Data source: Coin Dance

Unlike in Venezuela and Turkey, the Argentinian government has not yet issued any specific regulation on the issuance, exchange, custodial or, in general, use of cryptoassets. Cryptoassets are only subject to the Anti-Money Laundering Law and the Tax Reform Law. In addition, the Central Bank adopted a measure prohibiting cryptoasset transactions in the banking system following announcements from Argentina's largest and second-largest private banks stating that they will allow customers to make crypto purchases. We also have clear measures in favour of a greater crypto adoption with the citizens from the Mendoza Province and Buenos Aires who can now pay taxes using cryptoassets in 2022. The status of cryptoassets in Argentina is one of ambiguity. On the one hand, the former President, Mauricio Macri, met Ethereum co-founder Vitalik Buterin and described Ethereum as the "most innovative" decentralised technology of the century. Before that, the current President, Alberto Fernandez, stated that there was no reason for Argentina not to follow in the footsteps of El Salvador by accepting Bitcoin as a legal tender. On the other, the Central Bank authorities and the National Securities Commission of Argentina expressed concerns about inserting the crypto market with the traditional financial market and envisaged regulating the crypto market. The cryptoasset adoption by the President would lead to a significant rise in the number of cryptoassets holders (2.4 million Argentine citizens) currently accounting for 5.18% of the Argentine population. On the contrary, a pervasive regulation of cryptoassets might trigger a rush on already popular P2P platforms like LocalBitcoins (Figure 2). The latter recorded a tremendous 547% surge in the frequency of crypto trading between August 2019 and August 2020, while Paxful, another P2P platform, noticed a 60% rise in trading volumes from September 2019 to September 2020 and a 110% rise in the number of new user registrations in 2021. The increasing popularity of these platforms and cryptoassets originates from the reinforcement of capital controls ($200 per month of dollar savings), higher tax purchases made in foreign currencies (30%) and a lack of trust in State institutions forcing Argentinians to find an inflation hedge outside of centralised systems.

In summary, the adoption of cryptoassets in an emerging country starts with the depreciation of the sovereign currency and high inflation due to conjectural shocks and the structural problems they reveal. After that, the dollar progressively replaces the domestic currency as a medium of exchange thanks to its stability. Regulatory policies then stifle the dollarisation of society as the State strives to preserve its monetary policy levers and its ability to issue money. Subsequently, low volatility cryptoassets are gradually adopted as a replacement for the dollar. Ultimately, a set of crypto regulations is passed, which will lead to the development of cryptoassets through legally recognised entities or P2P networks, depending on the impacts of such regulations.