

**Dollarization as an Effective Commitment Device with  
Time Inconsistency Disease and Institutional Anomie:  
The Case of Argentina**

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**Abstract**

Dollarization can eliminate high, persistent, and volatile inflation. However, to be effective, it must generate sufficient credibility, which in turn depends critically on a low expected probability of reversal. In other words, dollarization can be successful if it is an effective commitment device (ECD). This paper explores whether dollarization can fulfill such role in societies that suffer from chronic time inconsistency and acute institutional anomie such as Argentina. The evidence suggests that, in the long-run, the strongest insurance against reversal is broad voter support, but in the short-run, institutional design can play an important role. The paper also specifically evaluates whether in the current circumstances and given a long history of reform reversals, endemic populism and acute institutional anomie, dollarization can be an ECD for Argentina.

Keywords: Foreign Exchange Rate Regimes, Dollarization, Monetary Policy, Time Inconsistency, Institutional Anomie, Argentina.

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## Dollarization as an Effective Commitment Device:

### Theory and Evidence

*Once credibility has been lost, economists don't know much about how to restore it.*

Finn E. Kydland (2004)

*And so, to make them all follow him whether they liked it or not, he resolved to destroy his ships, a bold and dangerous thing to do.*

Francisco López de Gomara, "Life of Hernán Cortés"

#### 1. Introduction

Fifty years ago, in testimony to U.S. Congress, Milton Friedman argued that "the whole reason why it is an advantage for a developing country to tie to a major country is that, historically speaking, the internal policies of developing countries have been very bad. U.S. policy has been bad, but their policies have been far worse... no gyrations in American monetary policy which can hold a candle to the gyrations which have occurred in Argentinian domestic monetary policy. So, the whole reason why tying to a major currency would be an advantage to Argentina is that precisely that it would prevent them from following bad domestic monetary policies. They would have less of an adjustment problem simply because our policy will prove to be more stable than theirs (1973, p.127)."

Not much has changed in Argentina in this respect since Friedman's statement. As an inflationary cycle that started in 2002 accelerates and a presidential election looms, economists

and policymakers are exploring a variety of options to achieve lasting price stability.<sup>2</sup> Official unilateral dollarization is one of the options being proposed, at least by one of the leading presidential candidates. This in turn has prompted a renewed debate among academics about its advantages and disadvantages (see Nicolini, 2021 and 2022; Ocampo and Cachanosky, 2022; Uribe, 2022a and 2022b; and Sturzenegger, 2023).

The idea of adopting the dollar as legal tender is not new. In the late 19<sup>th</sup> century, one of its most enthusiastic proponents was W.S. Jevons (1875). At the beginning of the 20<sup>th</sup> century several countries in Central America adopted the dollar as legal tender and kept it until World War II (Helleiner, 2003, 2005). In the early 1970s, Milton Friedman (1972) recommended dollarization as the best option for developing countries to eliminate high and volatile inflation. However, it was not until the late 1990s that dollarization started to be seriously considered in policymaking and academic circles (see US Congress 1999a and 1999b).<sup>3</sup> The debate about its cost and benefits was largely prompted by President Carlos Menem's announcement in early 1999 that Argentina would adopt the dollar as legal tender. Although the decision was never implemented, Ecuador dollarized in January 2000 and El Salvador followed suit twelve months later.

The terms of the dollarization debate can be summarized as follows. On the cost side, dollarization entails: 1) loss of seigniorage; 2) loss of lender-of-last-resort capabilities; 3) loss of exchange rate policy as a shock absorber; and 4) inability to reduce the value of public debt in domestic currency via devaluation or inflation. In turn, the benefits include: 1) low inflation, 2) lower transaction costs; 3) elimination of currency risk, which reduces domestic interest

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<sup>2</sup> In the case of Argentina, the analysis of inflation as cyclical phenomenon yields valuable insights. Saboin-Garcia (2018) originally applied the idea to hyperinflation and Ocampo (2021a, 2023) extended the concept to link inflationary cycles, populist cycles, and commodity cycles.

<sup>3</sup> A search of journal articles and working papers that have the word "dollarization" in their title, abstract or keywords in the IDEAS/RePEc database suggests research interest peaked between 2001 and 2009 and then gradually declined.

rates; 4) potentially lower country risk premium and a more favorable environment for investment and growth due to price stability; 5) elimination of the currency mismatches in the country's balance sheet; and 6) a reduction of roll-over risks of public debt. A detailed discussion of all of these issues can be found in Cukierman, Kiguel and Liviatan (1992), Liviatan (1993), Hanke and Schuler (1999), Goldfajn and Olivares (2000 and 2001), Velde and Veracierto (2000), Berg and Borensztein (2000), Alesina and Barro (2001), Calvo (2001), Calvo and Reinhart (2002), Chang and Velasco (2001), Dornbusch (2000), Eichengreen (2001), Antinolfi and Keister (2001), Grubben, Wynne and Zarazaga (2001), Guidotti and Powell (2002), Karras (2002), Levy Yeyati and Sturzenegger (2002), Jacome and Lonnberg (2010), Lindenberg and Westermann (2012) and White (2014).

The costs and benefits of dollarization are related to two implementation issues that were also debated at the turn of the century: 1) whether certain ideal pre-conditions are necessary for dollarization to be viable and successful, and 2) whether in countries with a long history of high, persistent and volatile inflation, dollarization is an effective commitment device (ECD), i.e., a mechanism, technology, constraint or process that can credibly resolve the time-inconsistency problem of economic policy, as described by Kydland and Prescott (1977), Calvo (1978, 1994 and 2000) and Barro and Gordon (1983).

Goldfajn and Olivares (2000) provided one of the first empirical attempts to evaluate the costs and benefits of dollarization based on the experience of Argentina (currency board), Costa Rica (floating regime) and Panama (dollarized). They concluded that, on the positive side, dollarization can effectively and permanently reduce inflation and “even reduce the impact of external confidence shocks, although not external real shocks”. On the negative side, it does not guarantee fiscal discipline, nor necessarily reduces default risk or the volatility of sovereign spreads. Regarding the need for pre-conditions, on one camp were those who argued that adopting the dollar as legal tender only made sense in the presence of fiscal equilibrium, trade openness, limited public indebtedness and flexible labor markets. On the other side were those who argued that dollarization did not require any ideal pre-conditions. In fact, one of the key

reasons for a country to adopt the dollar as legal tender is a proven inability to attain such pre-conditions. In other words, if ideal pre-conditions can be achieved, there is no need to dollarize. Gruben, Wynne and Zarázaga (2001) warned that whatever its benefits, dollarization could not provide “a painless substitute for other much needed but perhaps painful economic reforms” and therefore recommended implementing it “with all other complementary reforms” (pp. 4,7).

If as Sargent (2013) argued, inflation is “always and everywhere a fiscal phenomenon, in which the central bank is a monetary accomplice,” it would seem logical to conclude that dollarization is not an ECD since it cannot solve the time-inconsistency problem. At most it can only transfer it to the fiscal authority. It is worth noting that the same argument can be made against central bank independence (Castellani and Debrun, 2005). Interestingly Ecuador’s government dollarized in January 2000 with a substantial budget deficit and during his ten-year presidency, Rafael Correa (2007-2017) followed an expansionary fiscal policy that doubled government spending as a percentage of GDP and led to substantial and persistent deficits. However, the annual inflation rate during this period averaged 3.8%.

If dollarization is an ECD, the debate about its advantages and disadvantages can be summarized as a trade-off between flexibility and credibility. As Chang (2000) observed, it is difficult to evaluate this trade-off, “partly because the word “credibility” has been employed in many different senses and partly because there has been virtually no success at quantifying the size of the potential credibility gains.” What was and still is beyond dispute, is that policy flexibility in the hands of populist governments is detrimental to price stability and economic growth.

Absent in the debate was any discussion of the different ways in which dollarization could be designed and implemented to be more effective as a commitment device. In theory, there are many ways to officially dollarize an economy and not all have the same expected probability

of being reversed (or financially degraded).<sup>4</sup> Implementation flexibility is related to the structure of the banking system and if and how the central bank is liquidated. In theory, an “optimal” dollarization scheme minimizes the probability of reversal.

Since in modern economies bank deposits account for 80% or more of the money supply, the banking system is the “Achilles heel” of any dollarization scheme. For example, in Argentina, bank deposits represent approximately 85% of M3. Even if dollarized, any fractional reserve banking system with a high ratio of inside money to outside money and low asset quality would be unstable and prone to bank runs. For example, also in Argentina, credit to the public sector (including the central bank) currently accounts for approximately two thirds of aggregate credit (in 2022 credit to the private sector was less than 8% of GDP). Even if the economy were to be dollarized, a bank run could lead to a massive financial crisis and, possibly, forced de-dollarization. Therefore, to be an ECD, dollarization must, among other things, be designed to not only ensure financial stability, but also to a) minimize the degree of “crowding out” in the banking system, and b) prevent policymakers from confiscating bank reserves or deposits to finance persistent budget deficits. As Romero and Sandoval (2019) pointed out in their analysis of the Ecuadorean experience, when dollarizing it is advisable to eliminate “any tool of monetary policy” (p.8), i.e., eliminate the central bank.

The relevance of all the above considerations also depends on the rationale for adopting the dollar as legal tender (Alesina and Barro, 2001a, p.384). If the decision is driven by trade considerations, by definition, the effectiveness of dollarization as a commitment device would not be an important consideration.<sup>5</sup> On the other hand, if the objective is to achieve lasting price stability, which is the case in Argentina, the effectiveness of dollarization as a commitment

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<sup>4</sup> Official or *de jure* dollarization is a government decision. Spontaneous or *de facto* dollarization is decided by the people.

<sup>5</sup> In fact, in this scenario, signing a trade-agreement with the USMCA would probably be an equally effective commitment device.

device is key. In fact, it is a necessary condition to generate the credibility needed to drastically reduce inflation.

When this debate took place almost twenty five years ago, the only country in Latin America that had a sufficiently long track record using the dollar as legal tender was Panama, a small economy that for most of its history had been economically dependent of the United States and therefore not a useful comparable.<sup>6</sup> We now have a substantial, although far from complete, dataset to re-evaluate many of the unresolved questions raised in the debate.<sup>7</sup>

The objective of this paper is twofold. First, to revisit the debate about the pros and cons dollarization, particularly in countries that suffer from time inconsistency disease (Kydland, 2004) and institutional anomie (Nino, 1992 and Waldmann, 2004 and 2006). Second, to assess whether dollarization can be an ECD in Argentina, the paradigmatic country that exhibits both conditions. The next section discusses the concepts of time inconsistency disease and institutional anomie and how they are connected. Then follows a review of the theory and evidence behind commitment devices. The fourth section analyzes the case of Argentina in light of its history and current circumstances, and the final section proposes some tentative conclusions.

## **2. Time-Inconsistency Disease and Institutional Anomie**

When it comes to dollarization, the key issue is whether it is a “solution” for countries with long history of high, persistent, and volatile inflation such as Argentina, Nigeria, Venezuela, or Zimbabwe. A typical feature of the political system in many of these countries, whether

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<sup>6</sup> The modern literature on dollarization has not fully explored the dollarization experience of many countries in Central America, which in the first half of the 20<sup>th</sup> century had adopted the dollar as legal tender (See Helleiner, 2003 and 2005 and Schuler, 2005).

<sup>7</sup> Since the nationalization of the canal in 1999, Panama regained its economic autonomy and has become a thriving regional banking center and trade hub. Its experience since then is relevant to address the issues discussed in this paper.

democratic or autocratic, leads to frequent policy or reform reversals (including reversal of Convertibility in Argentina and of dollarization in Zimbabwe). On one hand, policymakers, even if well intentioned, cannot fulfill their policy promises and as a result they have no credibility.<sup>8</sup> On the other hand, they have no recourse to any formal or informal mechanisms to convince the public that they will not reverse their policies in the future and thus generate credibility for their policies today. Such countries suffer from time-inconsistency disease and acute institutional anomie. As we shall see, they are two sides of the same coin. Institutional anomie is one of the reasons why governments cannot resolve the “commitment problem,” i.e., they cannot reduce the time inconsistency of economic policy.

### *Time Inconsistency Disease*

Kydland (2004, 2008, 2014) coined the term “time-inconsistency disease” to describe a situation in which policymakers are persistently unable to resolve the time-inconsistency problem. Typical symptoms of this condition are a high, volatile, and persistent inflation and a history of recurrent sovereign debt defaults. Policymakers in countries that suffer from time inconsistency disease have no ECDs under domestic jurisdiction and therefore lack credibility. In such cases, Rogoff’s (1985) solution –to appoint a conservative and independent central banker– is not realistic alternative. In these countries, *de facto* central bank independence is a chimera. Therefore, eliminating inflation rapidly and permanently may require that policymakers “tie their hands” with a currency board or a currency union (Calvo, 2000, p.4).

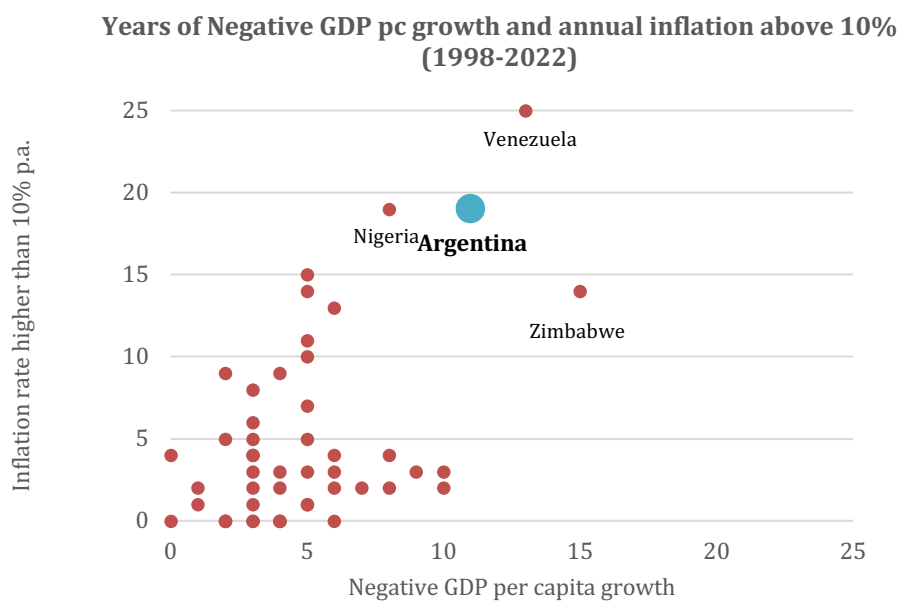
In Kydland’s view, the main symptom of time inconsistency disease is vanishing credibility and a persistent inability to recover it. Its main consequence can be visualized in the graph below, which shows for the last quarter of a century, the number of years in which a country

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<sup>8</sup> It is important to note that there are several key dimensions to the time-inconsistency problem depending on how the policy “game” is framed and who are its “players”, e.g., government versus private agents, national government versus regional or provincial governments, governments versus foreign creditors (private bondholders and the IMF) and current government versus future government.



had negative GDP per capita growth (horizontal axis) and an annual inflation rate above 10% (vertical axis). The sample includes 49 emerging market economies as defined by the IMF (excluding members of OPEC in the Middle East). Within this sample, in only 22% countries both criteria were met for an aggregate of ten years. Only eight countries had an annual inflation rate higher than 10% over an aggregate of 15 years. Argentina, Zimbabwe, and Venezuela are clear outliers, closely followed by Nigeria.



Of the three countries that dollarized in the 21<sup>st</sup> century, only two –Ecuador (2000) and Zimbabwe (2009)– seem to have been suffering from time inconsistency disease. Therefore, their experience is very relevant to the discussion.

In Ecuador, dollarization was accompanied by several structural reforms that were later reversed under the presidency of Rafael Correa (2007-2017). However, dollarization survived despite a series of demand and supply shocks (the 2008 global financial crisis, two sovereign defaults, the reversal of the commodity cycle, an earthquake in 2016, Covid-19, etc.) and several attempts by Correa to reverse or degrade it. The annual inflation rate since 2000 has averaged 4.8% and GDP per capita has grown at annual rate of 1.25%, which in a regional context, is an average performance. This compares to a 36% annual inflation rate and no growth from 1980 until 1999. Persistent popular support for dollarization suggests that in Ecuador it

was successful not only economically but also politically, i.e., it was an ECD. Zimbabwe, which in early 2019 fully reversed its decade old dollarization, provides a counter example. Since then, the economy has been in a slump and the inflation rate is among the highest in the world. The experience of Ecuador, El Salvador and Zimbabwe suggests that different levels of democratic development go a long way to explain whether dollarization can serve as an ECD.

A potential cause for persistent time-inconsistency in democratic societies is the prevalence of hyperbolic discounting among a majority of voters (Thaler, 1981; Laibson, 1997). Under such scenario, if electoral democracy works relatively well, politicians will act in accordance with the preferences of a majority of voters and that the political process will favor fiscal profligacy, particularly in the form of higher public consumption expenditures. If time inconsistent voters constitute a majority, is also likely that politicians will adopt policies that promote private consumption expenditures at the expense of private investment (see Drometer, 2006; Bisin, Lizzeri and Yariv, 2015). In Latin America, such policies have been traditionally associated with populism (see Dornbusch and Edwards, 1991).<sup>9</sup> The available evidence suggests that by magnifying an economy's structural imbalances (monetary, fiscal, relative prices, exchange rates, etc.), populism tends to exacerbate the time-inconsistency disease. Populism also exacerbates hyperbolic discounting among voters setting off a vicious mutually reinforcing loop.

As Kydland also pointed out, time-inconsistency disease can be difficult to cure. Only a strong commitment device can restore the credibility of policymakers. But this is in some ways tautological. Chronic time-inconsistency disease can only exist if formal or informal commitment devices are not available. Under such circumstances, even the best-intentioned

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<sup>9</sup> A recent study confirms that European populism is also characterized “by short termism, the denial of intertemporal budget constraints, the failure to evaluate the pros and cons of different policy options as well as trade-offs between them (Andersen et al, 2017, p.53).”

politicians pay the cost of past misdeeds, and their policy announcement consistently lack credibility.

### *Institutional Anomie*

The inability of policymakers to commit to a policy rule is related to another condition that has been seldom explored by economists: institutional anomie. The term anomie dates to ancient Greece but was popularized in the late 19th century by French sociologist Emile Durkheim. Etymologically, anomie is derived from the Greek word *anomos*, which means lawlessness. In sociology it is a social condition defined by a breakdown of moral values, standards or rules of interpersonal behavior required for constructive social interaction. Argentine jurist Carlos Nino (1992) expanded the concept of anomie and defined it as “massive recurrent illegality”, or a situation in which most of the population lives “outside the law.” Nino distinguished between institutional and social anomie. The former concerned the Executive and government officials, while the latter, the general population. According to Nino, “dumb” social anomie occurred when non-compliance with rules led to collective results that were inferior to those achievable with compliance. Building on Nino’s work, Waldmann (2004, 2006) argued that the anomic State was common throughout Latin America. In his view, there was no contradiction between anomie and State power. The modern State was imposed artificially and did not emerge out of institutional evolution as in Europe and the United States. Whatever its origins, when acute institutional anomie prevails, government officials up to the President not only fail to enforce the laws but break them whenever it suits their purposes. When existing laws constrain its behavior, the Executive ignores them with impunity or “forces” Congress to change or abrogate them. This happens when *de jure* separation of powers is not operational.

Populism exacerbates time inconsistency and degrades the institutional devices that could help moderate it. In other words, by degrading legislative and judicial independence it renders toothless any commitment device under domestic jurisdiction. With chronic and acute

institutional anomie, it is difficult to cure time inconsistency disease. This condition is not engendered by occasional bouts of populism but by its endemic form.<sup>10</sup>

### *Argentina: A Paradigmatic Case*

Not surprisingly, Argentina is the paradigmatic case of institutional anomie and endemic populism. Since 1945, in the forty years in which electoral democracy was functional, populism prevailed two thirds of the time. According to Kydland (2004) the origins of time inconsistency disease in Argentina can be traced to “past hyperinflations, devaluations, deposit freezes and defaults on government obligations”. This explained the country’s high inflation and its poor growth performance since 1945.

As mentioned earlier, hyperbolic discounting is one of the factors that may explain time-inconsistency disease. In a recent study of 61 advanced and developing countries, Argentina was an outlier in terms of impatience (Ruggeri et al., 2022). Plenty of past and present anecdotal evidence as well as public opinion surveys suggest that short-termism is deeply rooted in Argentine history and culture (Shumway, 2005; Aguaysol, 2021). However, this condition seems to have been exacerbated by populism. Hyperbolic discounting is a rational response to endemic populism.

With respect to institutional anomie, Nino (1992) argued that the country suffered an “institutional imbalance” due to the gradual absorption of Congress’ normative and legislative prerogatives by the Executive Branch (p.73). In his view, this partly explained Argentina’s economic decline since 1945. Waldmann (2004, 2006) agreed that in Argentina social and institutional anomie were particularly strong.

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<sup>10</sup> Since 1945, in only 40 years Argentina’s presidents were elected by a majority vote and two thirds of the time followed populist policies.

Plenty of evidence confirms that Argentina suffers from acute institutional and social anomie. In an economic policy context, the clearest, and perhaps most relevant, indication of the former is the contrast between *de facto* and *de jure* central bank independence. Romelli (2022, 2024) provides the most updated survey of *de jure* central bank independence (CBI). In the case of Argentina, the CBI index dates to 1935, when the central bank was created as a mixed ownership entity. In During the first Peron regime (1946-1955), Argentina had higher *de jure* central bank independence than the US or Switzerland.<sup>11</sup> During the regime of Cristina Kirchner (2008-2015), Argentina’s CBI index was close to the median of N countries. According to certain methodologies, it was comparable to that of the Federal Reserve and in all cases higher than the Bank of England’s. During this period, Argentina’s inflation rate was among the ten highest in the world.

#### **Comparative Measures of *de jure* Central Bank Independence (2008-2015)**

Methodology	Argentina	UK	US	World Median
Grilli, Masciandaro and Tabellini (1991)	0.56	0.28	0.75	0.56
Cukierman, Webb and Neyapti (1992) UW	0.55	0.15	0.81	0.70
Cukierman, Webb and Neyapti (1992) W	0.53	0.21	0.74	0.68
Jacome and Vazquez (2008)	0.65	0.23	0.66	0.69
Romelli (2022)	0.63	0.35	0.63	0.67
Garriga (2016) UW	0.80	0.40	0.40	n.a.
Garriga (2016) W	0.78	0.48	0.48	n.a.

Source: Romelli (2022, 2024) and Garriga (2016).

The Argentine people take institutional anomie as a fact. Results from recent surveys by *Latinobarómetro* indicate that Argentina has the lowest percentage of respondents who consider judges to be law abiding. In comparison, Uruguay, a country that has a similar GDP

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<sup>11</sup> In their seminal paper on measures of central bank independence, Cukierman, Webb and Neyapti (1992) clarified that “the actual independence of the Argentine central bank is substantially lower than the legal indicators imply” (1992, p.363). This seems like an understatement.

per capita, level of education and culture, the differences are significant. Rhodes and Streb (2014) provide evidence of the judicial impunity of government officials in Argentina.

These findings are also confirmed by indices of judicial and legislative constraints on the Executive published by The V-Dem Institute. As can be seen in the table below, such indices are significantly lower in Argentina than in any of its neighbors. Interestingly, during the 1900-29 period, the opposite was true, at least with respect to the Judiciary. Constraints on the Executive were also higher than today, which suggests institutional anomie can be moderated.

Period	Legislative Constraints on Executive				Judicial Constraints on Executive			
	Argentina	Brazil	Chile	Uruguay	Argentina	Brazil	Chile	Uruguay
1900-29	61%	16%	65%	66%	87%	52%	64%	84%
1930-42	62%	1%	67%	53%	81%	47%	65%	80%
1943-45	20%	0%	64%	84%	78%	46%	68%	82%
1946-55	35%	65%	66%	84%	41%	54%	66%	85%
1956-83	30%	29%	46%	51%	56%	44%	53%	59%
1984-99	68%	81%	80%	89%	66%	86%	85%	89%
2000-20	74%	85%	96%	90%	69%	90%	95%	93%

Source: V-Dem Institute.

The *Latinobarómetro* surveys also confirm that Argentina also has a relatively high degree of social anomie, i.e., individuals are less likely to obey the law than in other countries:<sup>12</sup>

### How much do your fellow countrymen abide by the law?

	Average 17 Latin America Countries	Average Southern Cone	Argentina
Very much	5.3%	3.8%	0.9%
Somewhat	10.0%	14.9%	10.0%
A little	62.9%	64.2%	64.1%
Not at all	21.9%	17.2%	25.0%

Source: Latinobarómetro (2020).

<sup>12</sup> Argentina in fact exhibits the most extreme values when it comes to compliance and non-compliance.

When asked to evaluate how conscious their countrymen are in fulfilling their obligations under the law, responses in Argentina had the lowest percentage of those who are conscious and the highest percentage of those who are not. Interestingly, these surveys also confirm that social anomie was less intense in the late nineties when the currency board regime was in place.

The cultural roots of Argentina's social and institutional anomie can be traced back to the colonial period. Throughout the Spanish colonial empire, the practice of "revering but not obeying the law" became institutionalized (see Fernandez and Monteserin, 2014). During his visit to Argentina in 1833, Charles Darwin observed the anomic nature of the country's inhabitants:

"Police and justice are quite inefficient... [Argentines] seem to think that the individual sins against the government and not against the people... Nearly every public officer can be bribed. The headman in the post-office sold forged government franks. The governor and prime minister openly combined to plunder the state. Justice, where gold came into play, was hardly expected by anyone." (1839, p.171).

Darwin also noted that these attitudes were related to *caudillismo* (the cult of the strongman), another legacy of the Spanish conquistadors, which in turn, is a key ingredient of populism (see Ocampo, 2018). In a populist regime, the will of the leader (who supposedly incarnates the "will of the people") supersedes any written or unwritten norms or laws. In this sense, populism can be viewed as a regression to a more primitive form of political and social organization: the law of the strongest: the cult of the strongman prevails over the rule of law.

One factor that may partly explain why institutional and social anomie manifested themselves more strongly in Argentina than in other former Spanish colonies. Buenos Aires, the capital of the Viceroyalty of the River Plate, was the center of contraband in the Spanish South American colonial empire. Breaking the law was not only business as usual but a necessity to survive. As observed by one of the first sociological studies of Argentina, this left an indelible mark on the

culture of its inhabitants: “Society is brought up to disregard the law; an idea so dominant and ingrained that after a short walk it became a feeling, it became ingrained, perverting the intelligence and morality of the *porteño*” (García, 1900, p.208).<sup>13</sup>

Juan Bautista Alberdi, who drafted the country’s first constitution, believed that a century of rule of law would be necessary to completely eradicate the cultural legacy of Spanish colonialism (1854, p.57). After the enactment of the first constitution in 1853, Argentina gradually improved the quality of its economic and political institutions. This virtuous evolution culminated with the electoral reform of 1912, which extended the voting franchise. Unfortunately, the election of Hipólito Yrigoyen to the presidency in 1916 reinvigorated *caudillismo*. It is a tragic irony that Yrigoyen, a champion of electoral reform, would be responsible for reintroducing a cultural trait inimical to liberal democracy. The military coup that ousted him in 1930 marked the end of a virtuous process of economic and institutional development that had transformed Argentina from a backward pastoral society into an economic powerhouse. After the Great Depression, the stage was set for the emergence of populism, which in many ways incarnated many institutional and cultural vices reminiscent of the Spanish colonial system. All that populism needed to materialize was a catalyst, which World War II provided.

The ascendancy of Juan Perón to power through a military coup in June 1943 firmly established *caudillismo* as a permanent feature of Argentine political life and put a definitive end to nine decades of virtuous institutional evolution. Peron not only emulated Mussolini’s corporatist system but also, thanks to the decisive influence of his wife, he institutionalized nepotism, clientelism and patrimonialism, typical features of the Spanish colonial system. The economic policies reinforced and promoted cultural values that sustained the Peronist regime (Ocampo, 2018). As populism became endemic, social and institutional anomie gradually coagulated into

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<sup>13</sup> *Porteño* is a native of Buenos Aires.



Argentine culture and politics. A vicious cycle of economic stagnation, financial crises, social frustration, and institutional and cultural degradation followed. Entrenched interests and a weak political system with perverse incentives made populism path-dependent. Persistent instability also infected voters with time inconsistency disease. Argentina's history since 1945 provides strong evidence in support of the hypothesis that persistent populism exacerbates the time-inconsistency problem and degrades the mechanisms that could solve it.

### **3. Dollarization as an ECD: Theory and Evidence**

In the context of public policy, a commitment device is any formal or informal constraint on the ability of governments and/or politicians to renege on their promises. An effective commitment device (ECD) is one that achieves the objective of reducing or eliminating time inconsistency.

#### *Theory*

Commitment devices can be formal or informal and depending on where enforcement is located, they can be domestic, external or a mix of both. Formal domestic devices are typically laws that give independence to the central bank, establish monetary rules, fix the exchange rate or limit fiscal profligacy. Domestic informal devices can take the form of a disciplining electorate or a strong interest group that is highly intolerant of inflation, e.g. the banking system (see Posen, 1995 and 1998). In a working democracy, the strongest commitment device is the vote of the majority. However, as discussed in the previous section, under certain conditions, voter preferences can contribute to time inconsistency. Sometimes, countries have no option but to consider commitment devices imposed from abroad (Santaella, 1993, p.589).

### A Menu of Commitment Devices

	<b>Internal</b>	<b>External</b>
<b>Formal</b>	CB independence Fiscal Rules Currency board	Bond Covenants IMF Conditionality External Supervision (Austria, 1922) Int'l Currency Agreement (Bretton Woods)
	Currency union (Eurozone) Gold Standard Dollarization	
<b>Informal</b>	Voter intolerance Banking lobbying	Reputation Financial Markets High trade and financial integration

Until 1914, the gold standard was the most common and effective commitment device used around the world to maintain price stability (Bordo and Kydland, 1990). It had both an internal and an external component. In modern times, external commitment devices have generally been implemented by foreign creditors through bilateral or multilateral treaties or as loan or bond covenants. In the 1920s certain European countries –most notably Austria and Hungary– surrendered monetary sovereignty to the League of Nations to restore price stability (Santaella, 1993; Marcus, 2020). More recently, IMF conditionality attempted to fulfill a similar role but has been much less effective (see Edwards, 1989; Sachs, 1989 and James, 1998).

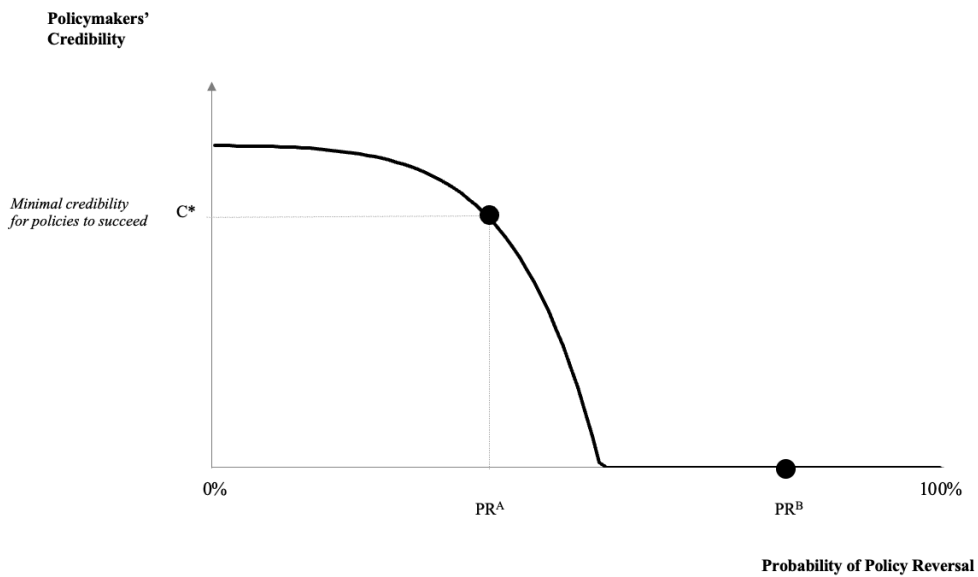
After the demise of Convertibility in Argentina, Dornbusch and Caballero (2002) proposed a rescue plan inspired in the Austrian 1920s scheme. “Argentina is bankrupt, bankrupt economically, politically and socially. Its institutions are dysfunctional, its government disreputable, its social cohesion collapsed,” they wrote. “Argentina now must give up much of its monetary, fiscal, regulatory and asset management sovereignty for an extended period, say five years.” As with many other external commitment devices, this one was not viable politically, and therefore useless.

As Cukierman, Kiguel and Liviatan (1992) pointed out, if a policymaker ties his or hands with a strong commitment, any stabilization program based on fixing the exchange rate is more

likely to have an impact on inflationary expectations. This is critical to bring down inflation quickly and without a high cost in terms of activity and employment levels. In countries that suffer from chronic time-inconsistency disease and acute institutional anomie, such as Argentina, monetary sovereignty is relatively costly because, by definition, no domestic ECD exists. Even the best-intentioned and best-designed stabilization plans –even if they impose legal restrictions to deficit financing or establish *de jure* central bank independence– cannot generate the minimum credibility they need to be successful. Given the impossibility of having a *de facto* independent central bank, the intersection of macroeconomically viable and politically viable stabilization plans is an empty set.

The following graph illustrates this point. For policies to be successful they must generate a minimum credibility of  $C^*$ . However, given chronic time-inconsistency disease and acute institutional anomie, the expected probability of reversal is too high. Policymakers are stuck in a sub-optimal situation,  $PR^B$ , and therefore have no way of generating sufficient credibility to successfully eliminate inflation.

### Credibility as a Function of Probability of Reversal



Dollarization has an internal and an external dimension. By eliminating the possibility of monetizing fiscal deficits, it can serve as an effective commitment device (ECD). Often conflated with a currency board, it is essentially different. Summers (1993) explained the difference with an apt analogy: “There are many strategies one could take to prevent disastrous results of reckless driving... the currency-board strategy is analogous to removing car accelerators while dollarization is like taking the train (p.32).” I shall explore these differences in more detail in the section that explains the demise of Convertibility.

Friedman (1972) was among the first to argue that in developing countries with a long history of high inflation, such as Argentina, dollarization was the best option to eliminate inflation. Anticipating the dollarization debate that would take place decades later, Fischer (1982) recognized that a government “that could not control itself might want the discipline of using a foreign money” (p.296). He argued that although there was “no absolutely guaranteed way of providing discipline for governments determined to avoid it”, the discipline imposed “by use of a foreign money is greater than that imposed by fixity of the exchange rate, which is greater than that imposed under a flexible-rate system. This is, therefore, a serious argument for use of a foreign money” (p.300).

Argentina’s success in eliminating inflation with a currency board in 1991 rekindled academic interest on the subject. Cukierman, Kiguel and Liviatan (1992) developed a model to analyze how policymakers choose the strength of a commitment to an exchange rate regime. The stronger a policymaker “ties his hands” to a certain regime, the more likely he/she is “to successfully affect inflationary expectation” (p.3). In their view, dollarization was the “strongest form” of commitment to a fixed exchange rate but was not irreversible. “Full dollarization can be abandoned, in the same way that countries in the past renege from strong commitments, such as during the gold standard (p.2)”. They concluded that “the difficulties and costs of reneging on such a commitment when the country faces large adverse shocks, whose adverse effects can be alleviated, at least temporarily, by a devaluation” was an important factor that explained why policymakers had stopped short of full dollarization. The experience of

Zimbabwe in 2015-19 confirms that in non-democratic countries dollarization can be reversed even if the economic and political cost is high. On the other hand, the experience many Central American countries in 1940s and 1950s –such as the Dominican Republic in 1947– confirms that dollarization can be reversed at low cost if fiscal discipline prevails. What makes reversal costly is lack of fiscal discipline.

At a 1993 World Bank sponsored event, distinguished economists discussed the pros and cons of currency boards and dollarization (Liviatan, 1993). The debate that took place remains relevant today. As Meltzer pointed out, “the improvement that results from a currency board (or some other system of credible rules), depends on the belief that the rule will be followed consistently... If people believe that the policy is time-consistent, they will go to a lower rate of inflation than they would if they believed that the policy was going to be abandoned at some point (1993, p.83).”

Leading the skeptical camp in the debate, Fischer revisited his 1982 paper and argued that, although on one hand, dollarization and currency boards supposedly enabled “policymakers to impose discipline on themselves or make the government more credible than any other system (p.8)”, on the other, governments “determined to break legal arrangements can usually do so (p.10).” Mundell agreed that there had to be “a confidence-building legal mechanism” to prevent a government from abandoning a currency board when it was convenient to do so. He recognized that even “constitutions can be changed” and therefore proposed the introduction of “some external constraint (p.11)” which he did not specify. Overall, Mundell believed dollarization and currency boards were effective commitment devices:

“Any rational government that decides to adopt a currency-boards system (or any other unabrogable fixed exchange system) will automatically plan on fiscal solvency. Once the exchange rate is fixed, the government will no longer have to worry about monetary policy; its sole macroeconomic task is to maintain fiscal solvency. (1993., p.28).”

Mundell believed that a constitutional amendment prohibiting “borrowing from the Central Bank would remove the incentive for any government to overturn the system, and force governments to fiscal discipline” (ibid., p.27). The decision of the Argentine government to default on its debt in December 2001 and scrap the currency board in January 2002 soundly refuted Mundell’s optimistic view of rational policymaking. In anomic societies, legal constraints, including constitutional amendments, tend to be insufficiently binding, even for democratic governments. Commitment does not depend so much on legal constraints but on political constraints. As Cukierman rightly observed, “the commitment level is determined by the political cost of breaking it (1993, p.33).” A stronger commitment is “such that the range of states of nature in which the commitment is broken is smaller” (ibid., p.34). Policymakers faced a trade-off between credibility and flexibility. “In other words, if you make a tough commitment, you’ll get somewhat better credibility” (ibid., p.34).

All these considerations came to the fore in early 1995, when Argentina’s Convertibility experienced its first existential threat. At the time, Zarázaga (1995a and 1995b) concluded that currency boards or other legal constraints on policymakers’ discretion were ineffective mechanisms to resolve time inconsistency. Their weakness “is common to other institutions and written laws as well, and its source is the same: ironclad rules do not resolve the basic problem of time inconsistency. This problem lies at the heart of the lack of credibility that haunts policymakers in countries that have frequently broken their commitments in the past. This lack of credibility explains why currency boards are subject to speculative attacks that they can resist without devaluing only at the cost of very severe financial crises.” According to Zarázaga, “depictions of currency boards –or any other ironclad rule, for that matter– as powerful devices that will magically restore investors’ confidence and, therefore, prosperity almost overnight and without pain do not help. On the contrary, this optimistic assessment may have the perverse effect of providing policymakers with the incentive to abandon their commitments on the mistaken impression that later, simply by institutionalizing a rule such as a currency board, they can quickly and painlessly restore lost credibility (Zarázaga, 1995b,

p.21).” Argentina’s success in confronting successive external crisis and speculative attacks from 1995 until 1998 and the experience of Ecuador, El Salvador and Panama since 2000 suggests that this view is overly pessimistic.

As already mentioned, a currency board regime is different in many important respects from a dollarization regime. Therefore, any conclusions about the latter, particularly if drawn from the Argentine experience, have limited value. We now have more evidence to test whether sovereign risk falls with dollarization, but a definitive answer is still elusive. A recent study by Mari del Castro and Gomez Puig (2017) found that in Latin America country risk spreads tend to a) be more sensitive to global than domestic factors, b) have higher impact on economic activity in non-dollarized than in dollarized economies. Ecuador has shown that populism is viable under dollarization and populism tends to be associated with higher country risk spreads. It is not easy to disentangle the effects of each factor.

By the end of the 1990s, partly due to President Menem’s announcement that Argentina would pursue full dollarization, the debate commitment devices heated up. Mundell again argued that dollarization was an ECD, as it would give a country “a rudder for its monetary policy, a stable rate of inflation, and discipline for its fiscal policy (budget deficits are anathema to fixed exchange rates)” (Friedman and Mundell, 2000). Dornbusch viewed dollarization as a way of “outsourcing” monetary policy to a credible central bank and “gaining credibility and stability automatically” (IMF, 2000, p.340). In his view, the gains from abandoning the national currency “come in the financial area and derive from enhanced credibility in the exchange rate and hence inflation performance” and are “inversely proportional to its quality, past, current and prospective.” Eliminating inflation was a big step “toward pervasive and deep reform” (Dornbusch, 2000).

Velde and Veracierto (2000) analyzed dollarization as a commitment device in the context of the Argentine situation. With a simple model in which the time consistency problem was reduced to the timing of moves between the government (that sets an inflation target) and the

private sector (that rationally adjusts its expectations to the chosen policy), they showed that by fixing the choice set for the government (zero inflation), dollarization could achieve the best outcome for society. Alesina and Barro (2002) argued that “type of country with the strongest incentive to give up its own currency is one that has a history of high inflation and is close in a variety of ways to a large and monetarily stable country” (p.435). Alesina, Barro and Tenreiro (2002) were emphatic about the strongest benefit of dollarization: “if an inflation-prone country adopts the currency of a credible anchor, it eliminates the inflation-bias problem” of discretionary monetary policy (p.308).

Calvo and Reinhart (2001) also came strongly in favor of dollarization. They argued that in emerging markets, where trade is generally invoiced in dollars, liability dollarization is high, and policymakers are not credible, exchange-rate volatility is very costly. Floating regimes may be more of an “illusion” and full dollarization “might emerge as a sensible choice for some countries, especially in Latin America.” Calvo (2001) emphasized that extensive liability dollarization strengthened the argument in favor of dollarization. Calvo (2002) argued that any flexible exchange system would likely face serious “credibility problems” in countries that have not yet reached “a national accord on the size and nature of the public sector.” Under such circumstances, a non-credible policymaker may have “to tie himself firmly to the mast” to get any lasting results in terms of price stability.

According to Mendoza (2001), dollarization could generate potentially large benefits in developing countries with a long history of monetary and price instability by: 1) eliminating price and wealth distortions induced by the lack of credibility, 2) improving the efficiency of financial markets though weakening informational or institutional frictions that constrained credit to the private sector. Using a model calibrated for Mexico, he estimated net welfare gains of between 6.4% and 9% of trend consumption through elimination policy uncertainty and 4.6% through weakening credit constraints. He concluded that:



“Dollarization, the internationalization of the financial system, the creation of strong-currency areas, and the strengthening of institutional and legal arrangements to counter the governments’ temptation to display time-inconsistency, could do away both with the risk of collapse of managed exchange rates and with the negative shocks caused by credit constraints that become acutely binding precisely when currencies collapse (Mendoza, 2001, p.37).”

The opposite argument was articulated by Schmitt-Grohe and Uribe (2001), who compared the welfare costs of business cycles in a dollarized economy to those of economies in which monetary policy took the form of inflation targeting, money growth rate pegs, or devaluation rate rules. They reached their conclusion using an optimizing model of a small open economy with sticky prices calibrated to the Mexican economy and driven by three external shocks: terms of trade, world interest rate, and import-price inflation.<sup>14</sup> Schmitt-Grohe and Uribe concluded that dollarization was the least successful of all the monetary regimes they considered. In their final remarks, they raised several points that are relevant today:

“In the welfare comparisons presented in this paper, the government is assumed to be able to perfectly commit to the implementation of any of the monetary policies considered. Our results may therefore be regarded as naive. After all, the reason why many observers favor dollarization is its assumed ability to tie the hands of governments too weak to resist the temptation of the printing press. However, the question of commitment could also be turned around: Is it not naive to believe that a chronically undisciplined government would alter its behavior merely because of a change in currency? Would such

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<sup>14</sup> The model was calibrated for Mexico, which never dollarized, under the assumption that dollarization was equivalent to a hard peg. However, dollarization potentially entails a regime change, i.e., a change the parameters of the model (Lucas, 1976). It was impossible to estimate those parameters and therefore are not reflected in the results of the model.

a government not simply get rid of dollarization at the first strong desire to inflate? Alternatively, would a government that has solved its fundamental fiscal problems not be as prepared to stick to dollarization as to any other low-inflation monetary policy, particularly if the alternative policies yield higher welfare? (pp.27-28).”

In further support of their argument, Schmitt-Grohe and Uribe also raised the issue of conflicting fiscal policies at the national and provincial levels. Based on Argentina’s experience with provincial quasi-monies during the Convertibility Plan, they claimed that, even under dollarization, a government could “reintroduce domestic currencies almost effortlessly and clearly do not need to create a central bank first. The most likely scenario is that the Treasury department will simply print low-denomination government bonds and use them to pay for current government expenditures. Thus, all that is needed is a printing press and some government obligations.” As a result, they concluded that “the superiority of adopting a foreign currency over other conventional monetary arrangements as a commitment mechanism should not be taken for granted (p.29).”

These arguments seem compelling and are worth reexamining given the new evidence. The Ecuadorian experience provides some answers. Dollarization initially brought fiscal discipline but in the medium term it was not able to constrain populism and/or eliminate fiscal profligacy and sovereign defaults, which undoubtedly contributed to unimpressive rates of growth of GDP per capita. However, it did reduce the macroeconomic cost of populist policies.<sup>15</sup> Ecuador’s annual inflation rate has averaged 3% (even lower than in the US in recent years) and, up until now at least, a large majority of the population supports maintaining the US dollar as legal tender. Correa tried to directly and indirectly circumvent the financial constraints imposed by

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<sup>15</sup> A back-of-the-envelope calculation suggests that in Ecuador dollarization reduced the cost of populism in terms of the annual real GDP per capita growth by an amount equal to between 0.6% and 1%. A more precise calculation would require a properly calibrated model.

dollarization. He temporarily achieved this objective by “appropriating” bank reserves and selling expensive forward oil contracts to China. However, he failed in his attempt to introduce a digital currency. His successor and erstwhile vice president, Lenin Moreno, who took office in 2017, had no option but fiscal austerity (see Cachanosky, Salter and Savanti, 2022).

With respect to the issuance of provincial quasi-monies, it has been a recurrent problem in Argentina under both fixed and floating exchange rate regimes (see Theret, 2020). The important point is that the monetary impact under dollarization would be very different than an under a currency board. A dollar issued by the U.S. Federal Reserve Board will never have the same value of a dollar denominated short-term note issued by an Argentine provincial government that overspends (unless the note carries an interest rate that reflects default risk.) If the domestic banking system is fully liberalized and cannot be forced to accept provincial quasi-monies at face value, their issuance would simply entail an automatic reduction of provincial government expenditures in dollar terms, which would obviously have serious political consequences.

Cooper and Kempf (2001) analyzed dollarization as a commitment device in Argentina in the context of the protracted conflict between fiscal authorities at the national and provincial levels. Under the existing system, provincial budgets were partially funded with resources provided by the national government through a sharing scheme. According to the authors, given that the Argentine central bank “lacks commitment power relative to the regional governments”, it must “find a way to commit to not financing the regional fiscal deficits” (p.11). Their conclusion is that dollarization could effectively serve as “a commitment device and thus eliminate the inflation bias created by decentralized monetary policy.” In turn, Gale and Vives (2002) analyzed dollarization as a commitment device in the context of recurring banking crisis and moral hazard. They concluded that dollarization could “alleviate the commitment problem faced by a central bank” when the costs of establishing a reputation for the central bank are and the risk of moral hazard is moderate or low.

Although generally not sympathetic to dollarization, Chang and Velasco (2002) raised a very important point that is sometimes overlooked in the debate. The theoretical potential losses of seigniorage caused by dollarization are irrelevant except in the context of a realistic and viable set of options available to policymakers to stabilize the economy:

“The lesson is that the numerous calculations of the seigniorage that would be lost with dollarization are meaningful only in conjunction with some explicit or implicit assumption about the policymaking process and, in particular, of the credibility problem that may be affecting policy. Only in the absence of such credibility problems one can assert unambiguously that the loss of seigniorage would, in fact, be a loss. If there is a credibility problem, the interpretation is much more problematic and, as we have argued, the loss of seigniorage may in fact be beneficial in welfare terms (p.19).”

In Chang and Velasco’s view, if credibility is absent and dollarization works as a commitment device, “the welfare impact of dollarization is ambiguous, and seigniorage measures and Mundellian criteria may be misleading indicators of the true cost of dollarization”. In other words, the option to dollarize the economy may be valuable if a government is incapable of generating credibility. However, the Chang and Velasco argue that the debate cannot be settled theoretically, because even “if a government suffers from poor credibility, and even if dollarization would improve credibility, it is not necessarily the case that dollarization is desirable.” In their view, under such scenario, whether dollarization is preferable to flexible rates “has to be demonstrated empirically”.

Based on Argentina’s experience with the currency board regime, Grandes (2002) argued that since dollarization was not the best policy “to improve fiscal discipline and push forward structural reforms,” one of its “most valuable” benefits –a reduction in country risk premium– would fail to materialize. This argument rests on the questionable assumption that dollarization would not encourage fiscal discipline and/or structural reforms.

Guidotti and Powell (2002) argued that unilateral dollarization was sub-optimal because it would not completely eliminate devaluation risk. In their view, in the case of Argentina, the credibility of dollarization depended critically on signing a monetary treaty with the US which ideally had to include a) a seignorage sharing agreement, and b) a backstop liquidity facility. Although undoubtedly such a treaty would bolster the credibility of dollarization, it proved politically unviable in the US even under an administration that was generally sympathetic to dollarization. Also, the experience of Ecuador and El Salvador shows that unilateral dollarization is not only viable but also resilient in the face of adverse internal and external shocks.

Mazarski (2009) argued that dollarization not only served as a commitment device but also, and more importantly, as a signaling device that could reduce macro uncertainty. He developed a model with two types of government: good and bad. The former conducts optimal policy while the latter prefers to finance sub-optimally high government expenditures by printing money; information is asymmetric, *ex ante* voters cannot discern the type of government they have, and the policies of the bad government are sub-optimal. Uncertainty does not allow a good government to achieve the first-best outcome even if it implements an optimal monetary policy. By dollarizing, the good government eliminates uncertainty about the type of government it is (the bad government would never dollarize) and achieves the first best allocation. Basically, dollarization plays the role of a signaling device rather than a commitment device.

Cabral (2010) analyzed the impact of real shocks on a small open economy operating under two “corner solutions”: a flexible exchange rate and official dollarization. Using an asymmetric two-country model, he demonstrated that although dollarization can generate credibility and achieve price stability, a small open economy might be better able to absorb shocks under a flexible regime. Although this is theoretically plausible, the argument falls into a Nirvana fallacy. First, it assumes not only that a flexible exchange rate regime is attainable, but also that an independent central bank exists and will always adopt optimal rules of intervention. These

are strong assumptions. In emerging markets “fear of floating” prevails, particularly in countries such as Argentina (see Calvo and Reinhart, 2002). Second, central bank competence and *de facto* independence tend to be the exception rather than the rule (this has certainly been the case in Argentina). Third, the evidence does not necessarily support the argument in favor of flexible exchange rates, particularly for countries suffering from time-inconsistency disease and acute institutional anomie. As pointed out by Dornbusch (2001), in these countries “exchange rates have been the dominant instrument of destabilization.”

The experience of Ecuador proves that a dollarized economy is not necessarily more vulnerable than a non-dollarized one. In the last twenty-two years, the Ecuadorean economy sustained several real shocks: the global financial crisis of 2008, a sovereign debt default in late 2008, a reversal of the commodity cycle from mid-2012 until early 2017, a massive earthquake in 2016, a sovereign debt default in 2020, the Covid-19 pandemic in 2020 and a political crisis in 2022 that led to the resignation of the president. We can compare its performance in terms of inflation and growth to Peru, which during this period had a managed floating regime, and Argentina, which experimented with a variety of regimes and economic policies. A back of the envelope analysis suggests that Ecuador underperformed the former and outperformed the latter.<sup>16</sup> However, given that during this period Peru did not suffer the consequences of left-wing populism, the comparison with Argentina is more relevant.<sup>17</sup>

Based on a comparative analysis of populism in Argentina and Ecuador, Cachanosky, Salter and Savanti (2022) concluded that while one cannot universally assert dollarization “improves economic and political outcomes—institutional contingency rules out such a sweeping claim—it can perform a useful role in credibly constraining the state from populist policy excesses”.

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<sup>16</sup> The volatility and lack of durability of foreign exchange regimes in Argentina is indicative of the magnitude of the underlying time-inconsistency and the absence of mechanisms to resolve it.

<sup>17</sup> A country can have dollarization with or without populism. The results are different. The evidence suggests that dollarization reduces the macroeconomic cost of populism.

Cachanosky, Ocampo and Salter (2023) highlighted certain design features that would make dollarization more effective as a commitment device: 1) closing the central bank, and 2) liberalizing the banking sector, and 3) ensuring bank reserves cannot be used to finance recurrent fiscal deficits. With chronic time inconsistency disease and acute institutional anomie, the effectiveness of dollarization as a commitment device in the short-term may depend critically on such design features. However, in the medium and long-term, electoral support provides the most effective insurance against reversal.

### *Reassessing the Debate considering the Recent Evidence*

In the three countries that dollarized in the 21<sup>st</sup> century, governments at some point attempted to reverse dollarization a) directly, with the introduction of a new currency, or b) indirectly, by degrading its financial integrity. The first strategy only proved successful in Zimbabwe, where in March-April 2019 the government implemented complete de-dollarization (following Argentina's 2002 playbook). It is important to emphasize that when the Zimbabwean government announced dollarization in 2009 it made it clear that it viewed it as a transitory measure, leaving the door open for the re-introduction of a domestic currency as early as in 2012 "if the macroeconomic situation allowed" (IMF, 2011, p.18). This announcement obviously made dollarization less effective as a commitment device. Not surprisingly, the macroeconomic imbalances that led to the unsustainability of dollarization in Zimbabwe had a fiscal origin:

"The resumption of large fiscal deficits financed by issuing quasi-currency instruments that were not convertible created substantial economic distortions, ultimately forcing the authorities to abandon the dollarized system and adopt a new domestic currency in early 2019. During 2016-18, off-budget quasi-fiscal activities, unbudgeted agricultural programs, and wage bill overruns proliferated, with budget outcomes significantly worse than approved budgets (IMF, 2020, p.5)."

The experience of Ecuador yields valuable lessons. The severity of Argentina's 2002 crisis (triggered by a disorderly exit from Convertibility) was fresh in the mind of presidents Lucio Gutiérrez and Rafael Correa when they pondered whether to reverse dollarization (El Nuevo Herald, 2003; BBC, 2015).<sup>18</sup> Correa had opposed dollarization as a professional economist (Correa, 2004), as Minister of Economy in 2005, as a presidential candidate in 2006 and as a two-term President from January 2007 until May 2017. He was the most popular president in his country's history and managed to amend the Constitution to get re-elected for a second term. He had more control over the Legislature and the Judiciary than Cristina Kirchner at the height of her power. However, he never attempted to reverse dollarization openly (although he tried indirectly). It wasn't because Ecuador's dollarization had been optimally designed but due to the simple fact that the dollar was more popular than he was (Calderon de Burgos, 2007). The same voters who overwhelmingly re-elected Correa in the 2013 election, wanted to continue earning their salaries in dollars. In early 2015, eight years into Correa's presidency, opinion polls showed that 85% of the Ecuadorian population was in favor of maintaining the dollar as legal tender (BBC, 2015).

Correa also failed in his attempts to de-dollarize the economy with the introduction of a central bank digital currency (see Arauz, Garrat and Ramos F., 2021). However, he successfully undermined the financial viability of dollarization by appropriating bank reserves to finance growing fiscal deficits (see Romero and Sandoval, 2019 and Erráez and Reynaud, 2022). These measures imposed a heavy burden on the Ecuadorean economy that have severely constrained its long-term growth prospects and led to another sovereign default in 2020.

In the case of El Salvador, President Nayib Bukele's attempts to replace the dollar with bitcoin also failed given the resistance of the population (see Alvarez, Argente and Van Patten, 2022). As in the case of Ecuador, these efforts had a significant impact on the economy. Since the

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<sup>18</sup> In contrast with Correa, Gutiérrez, who initially opposed dollarization, has become one of its most vocal advocates (see La Prensa, 2021).



approval of the Bitcoin Law in September 2021, El Salvador's country risk premium has averaged 1,150 basis points, compared to an average of 658 basis points during the presidency of Bukele until then.

The experiences of Ecuador and Zimbabwe strongly suggest that keeping a non-independent central bank after dollarization makes it easier for politicians to reverse it and/or degrade its financial integrity, and in the process damage its credibility and limit its effectiveness (see Cachanosky, Ocampo and Salter, 2022). The reason is simple. Freezing bank deposits and appropriating bank reserves are two of the most effective measures to de-dollarize and the central bank is the most efficient tool to implement such measures. However, as already mentioned, the most effective deterrent to the reversal of dollarization in Ecuador and El Salvador proved to be the voters, who refused to replace their dollar for the bogus currencies sponsored by their governments.

The experience of Zimbabwe confirms that reversing dollarization in the face of deep fiscal imbalances is costly: real GDP per capita contracted 7.8% in 2019 and 6.9% in 2020, and the annual inflation rate, which averaged 4.5% during the period 2009-2018, increased to 521% in 2019 and has remained one of the world's highest since then.<sup>19</sup>

In a relatively well functioning electoral democracy, a politician intent on forcibly replacing the dollar with a domestic currency would face several obstacles. First, the opposition of a

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<sup>19</sup> De-dollarization doesn't necessarily need to be traumatic if done by a fiscally responsible government at non confiscatory foreign exchange rates (Helleiner, 2003). This was the case in most of Central America after World War II. As an example, in the Dominican Republic, Dictator Rafael Trujillo reintroduced the Dominican peso in 1947 after almost four decades of having the dollar as legal tender. In the following decade, the domestic inflation rate did not significantly diverge from that of the United States.

majority of the population.<sup>20</sup> Second, the serious logistical complications of introducing a new currency. Third, a significant and negative economic impact on economic activity.<sup>21</sup>

In contrast to a currency board, reversal of dollarization not only hurts bank depositors but the entire population. Everybody would feel its impact since the government would not only redenominate bank deposits but also “take” dollar bills out of people’s pockets.<sup>22</sup> Politicians can estimate *ex ante* the electoral cost of doing so through public opinion polls. As mentioned earlier, Correa did and deemed it too high.

The importance of logistics cannot be underestimated. If the banking system is financially integrated to the rest of the world, the longer it takes a government to introduce a new currency the lower the probability that de-dollarization can achieve its intended objectives. As the recent collapse of Silicon Valley Bank shows, technology has made it much easier to move money from one bank to another. Depositors can anticipate the government’s intention to reverse dollarization by transferring their savings abroad. Relocating bank reserves offshore and putting them beyond the reach of the government would also make it more difficult to de-dollarize.

Although it is impossible to reduce the expected probability of reversal to zero, there are certain design features that can significantly reduce it in the short term. Such features would include: 1) the elimination of the central bank, 2) the creation of an independent bank supervisory and regulatory agency to ensure financial stability, 3) the privatization and relocation of bank reserves to a safe jurisdiction to prevent their appropriation by the political system for deficit

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<sup>20</sup> To the extent that reversal of dollarization entails violating property rights, the legal costs might not be insignificant. However, in the presence of institutional anomie they can be deemed irrelevant by politicians considering reversal. Even if the constitutional separation of powers and the rule of law are operational, judicial decisions take time and the final cost is unlikely to be borne by the public officials that decided dollarization (in fact, taxpayers will end up paying the cost of adverse verdicts).

<sup>21</sup> The key issue is the reason behind de-dollarization (see footnote 17).

<sup>22</sup> Reversal of dollarization means salaries will no longer be paid in dollars.

financing (as Correa did in Ecuador), 4) a full liberalization of the banking system and capital flows (full financial integration). Ocampo and Cachanosky (2022) provide a blueprint for such a dollarization scheme.

The experience of Panama, Greece, Ecuador, and El Salvador shows that in a working democracy, the best insurance against reversal of dollarization is the electorate. On the other hand, the experience of Zimbabwe shows that in a fledgling electoral democracy such insurance does not exist or is not strong enough. It also confirms that the survival of a non-independent central bank after dollarization facilitates de-dollarization.

Available data on institutional quality seems to support the electorate as insurance hypothesis. However, further research is needed to assess how decisive this factor is. Given the traumatic experiences of Argentina (2002) and Zimbabwe (2019), any politician would think twice before attempting to reverse a dollarization or a currency board. Higher financial integration also seems to strengthen the effectiveness of dollarization as a commitment device.

Country	Index of Electoral Democracy (2000-21)	Index of Judicial Constraints on the Executive (2000-21)	Index of Central Bank Independence (2000-12)	Index of Financial Integration (2000-2020)	Survived?
Zimbabwe	27.5	0.43	0.45	0.22	No
Ecuador	59.3	0.31	0.68	0.68	Yes
El Salvador	64.2	0.61	0.67	0.87	Yes
Panama	74.7	0.60	n.a.	1.00	Yes

Source: V-Dem Institute, Garriga (2016) and Chinn-Ito (2020). The IED is scaled from 1 to 100.

#### 4. The Case of Argentina

In Argentina economists and policymakers are again debating the advantages and disadvantages of dollarization. Given the experience of 2002, when a disorderly exit from Convertibility led to a deep crisis, one of the key issues being discussed is whether dollarization would be more effective as a commitment device than a currency board.

Years before the demise of Convertibility, Zarázaga (1995a) argued that the track record of a country was “far more important for policy credibility than the particular label (central bank or currency board) of the institutions that conduct policy (p.9).” He also warned about the ineffectiveness of a currency board or any other “ironclad” monetary rule to resolve time inconsistency. Given Argentina’s dismal track record, if no ECD is available, this conclusion leaves little hope that policymakers will ever be able to reduce inflation, least of all under a regime in which the peso survives. The notion that it would be possible to establish a track record gradually to gain credibility without an ECD is illusory. The failure of the gradualist strategy followed by the Macri administration (2016-2019) shows that inflation must be reduced quickly and permanently. It is not a macroeconomic requirement but a political necessity.

#### *Why did the 1899 Monetary Reform Succeed?*

As explained in the previous section, the notion that ironclad rules are ineffective is refuted not only by the experiences of Ecuador, El Salvador and Panama since 2000 but also by early Argentine history. The monetary reform of November 1899 –by which Argentina effectively joined the gold standard– imposed previously unattainable fiscal and monetary discipline on policymakers for almost three decades.<sup>23</sup> It is worth comparing this regime with Convertibility to try to understand why it lasted so long as an ECD.

Argentina ended the 19<sup>th</sup> century as the one of the world’s worst abusers of inflationary finance. In the first eight decades of Argentine monetary history, which formally started in 1822, the peso lost 98% of its value. There were only two brief periods of currency stability and several crises, most notably in 1873-75 and 1890-91. During this period, a depreciating and volatile peso was “almost part of the normal life” (Martinez and Lewandowski, 1911, p.330-32). By

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<sup>23</sup> Gold convertibility was suspended with the onset of WWI but reintroduced in 1927 and was finally abandoned after the Wall Street crash of 1929.

the end of the century, time-inconsistency was high and institutional anomie prevailed. As a London based financial journalist explained at the time the new reform was announced:

“[Argentina] is one of the most unfortunate victims of parliamenteering run wild. It is governed not by administrators, but by professional politicians. Everything in its national life, whether industrial, commercial, or financial, begins and ends in politics... There is all the difference in the world between a well-considered policy carried out by capable single-minded administrators, and a parody of the same after it has been hacked and pulled about by politicians who have a score of other objects in view than the one professedly aimed at (Lawson, 1899).”

After the 1890 crisis, which brought down the venerable House of Barings, all hope of monetary stability in Argentina was lost. To many foreign observers, the Argentine government’s manifest inability to manage its fiscal and monetary affairs in a responsible manner threatened to derail the country’s extraordinary economic expansion driven by beef and grain exports. A foreign observer pessimistically warned that if Argentines “are allowed to retain the undivided control of the administration, that faith will not easily be restored... The Argentine is incapable of administering anything –financial affairs least of all.” The solution to this problem was to “let able and honest resident Europeans step forward and take in hand the control of affairs which are in jeopardy, so long as they are managed by men with whom governor is but a synonym for robber, and government but a system of organized rapine, political obfuscation, and terrorism” (Turner, 1890, pp.344-345).<sup>24</sup>

At the turn of the century, a contemporary scholar of Argentine monetary history pointed out that inconvertible paper money had “served the official finances of all times as a contribution required from the country in difficult circumstances of its political life” (Pillado, 1901, p.1).

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<sup>24</sup> Dornbusch and Caballero (2002) arrived at a similar conclusion in 2002.

Juan B. Justo, a leading socialist intellectual and politician, described the inconvertible peso as “a curse for the people” and argued that monetary instability was a “calamity directly attributable to governments, which, with the unconsciousness of children, have played with the most elementary laws of currency, or have violated them with the conscience of villains” (Justo, [1921], pp. 30, 36-37).

Despite this dismal track record, at the end of 1899, the Argentine Congress approved a monetary reform proposed by the Executive that tied the peso to gold at a fixed party and established full convertibility. The announcement was met by skepticism in London. An article in *Banker's Magazine* by the influential W.H. Lawson –who for years had closely followed Argentine financial affairs– considered Argentina's new regime a “clumsy” copy of India's convertibility scheme and the zenith of “a long line of quack remedies.” He confidently predicted its inevitable demise:

“[The reform] is a new folly to be reckoned with in forecasting the future of Argentine finance. That it will be a fiasco, so far as the currency is concerned, requires no saying, but it may be powerful for mischief in other directions. It is all the more exasperating that such follies should be perpetrated in a period of unexampled prosperity, when there is less excuse for them than ever before... All who are interested in Argentine finance know that that is the indispensable virtue which it lacks, which it has never had except for very short intervals, and which may soon have to be given up in despair as an impossibility. The Argentines themselves appear to be utterly unable to comprehend the supreme importance of sound money in the commercial economy of nations... if the national treasury were managed with a tithe of the regularity and integrity which characterise the administration of the foreign-owned banks and railways, there would be very little trouble with the currency... It would seem as if the Argentines, before they hit on a true solution

of the monetary problem, must exhaust all the possible fakes and fallacies (Lawson, 1899).”

Despite Lawson’s dire warnings and the fact that the *Caja de Conversión* started its operations without any gold reserves, in a short period of time the Argentine peso became one of the strongest currencies of the world. As Della Paolera and Taylor (2001) have noted, one of the key factors that explained the success of the 1899 reform was “the degree of independence from political interference granted to the Conversion Office. The monetary authority was to be administered by a board of five directors chosen by the executive branch, each subject to approval by the Senate, and all appointed to a term in office of five years. This was a clear and transparent attempt to enhance the credibility of the institution by keeping it at arm’s length from the various branches of the government that might interfere with or apply pressure to the monetary authority as a way to seek fiscal or monetary policy relief in hard times. The plan was successful in this respect” (p.120). In other words, an ECD under Argentine jurisdiction was found. Institutional anomie was neutralized (for a while). Between 1899 and 1914 the economy experienced extraordinary growth and its GDP per capita was among the highest in the world.

Ford (1962) argued that the gold standard “worked” in Argentina for two reasons. First, the new regime didn’t face a critical test until mid 1913 and was abandoned a year later when WWI started. In other words, it was a “fair weather” regime. Secondly, exporters and the land oligarchy controlled the political system, and it was in their interest to keep the system afloat. In his view, in a primary export economy with a large foreign debt burden such as Argentina, adherence to the gold standard accentuated boom and bust cycles.

Bordo and Kydland (1990) conjectured that political stability was a key factor that explained why the gold standard was so durable, particularly in the UK and the United States. In their view, “countries fraught with unstable internal politics found it difficult to refrain from running budget deficits, ultimately financed by paper-money issue (for example, Italy and Argentina), although the benefits of convertibility likely placed some constraints on their behavior.”

(p.33).<sup>25</sup> According to these authors, another factor that explains the durability of the gold standard was the centrality of England. This factor certainly played a big role in Argentina, whose economy was closely tied to England's. Interestingly, in the 1930s, Argentina abandoned the gold standard almost two years before England did.

However, neither the abandonment of the gold standard in 1914 amid a financial crisis, nor the emergence of a new power structure in 1916 significantly altered Argentina's monetary dynamics. As pointed out by Della Paolera and Taylor, between 1914 and 1927 there was "strict adherence to the [monetary] rule [implied by the gold standard] ... There was no wild recourse to money printing" (2001, p.197). It is important to note that during this period there was a major shift in political power. Also, contrary to Ford's assertion, after 1916 Argentina was governed by the Radical Party, which represented the interests of urban middle classes. In other words, even though the peso convertibility ended in August 1914, Argentine policymakers continued to adhere –albeit less strictly– to principles of fiscal and monetary orthodoxy. As a result, in the first three decades of the 20<sup>th</sup> century, "as a measure of value and as a store of value the Argentine peso was comparable on the exchanges to the Swiss franc, the pound sterling and the United States dollar (Ferns, 1992, p.272)." One could argue that the "true" Argentine economic miracle started in November 1899, when the country managed to achieve lasting price and currency stability for the first time in its short history.

Although the gold standard was abandoned at the end of 1929, two years passed before there was an unbacked expansion of the money supply (Salama, 2000, p.10). According to Della Paolera and Taylor, in 1930 almost 80 percent of the money base was backed with gold, a ratio significantly higher "than in any other gold standard country." (2001, p.192). And even during the worst years of the Great Depression, Argentina maintained a "basic orthodox fiscal stance" (ibid., p.193). The first clear sign of a regime change took place in April 1931, when the *Caja*

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<sup>25</sup> As it relates to Argentina this statement is only valid until 1899. Also, political stability decreased markedly in the years following the monetary reform.



*de Conversión* started rediscounting commercial paper (ibid, p.188). The creation of the Argentine central bank (BCRA) in April 1935 was also a milestone in the country's return to monetary and fiscal indiscipline. Be it as it may, until 1942, Argentina's inflation rate did not diverge significantly from that of Australia, Canada, Great Britain, and the United States. During this period the Central Bank had mixed ownership and remained *de facto* independent (although *de jure* it was less independent than today). In fact, a League of Nations report praised its prudent counter-cyclical management of monetary policy before the onset of World War II (League of Nations, 1944, pp.84-85).

As mentioned in a previous section, the June 1943 military coup led by Juan Perón and a group of young military officers, was a major turning point in Argentine history. In a short period of time, under Perón's leadership, the country entered the top positions in the global inflation rankings. By April 1946 Perón had completely abrogated the independence of the central bank and made the inflationary tax a recurrent source of deficit financing.<sup>26</sup> Since then, the only lasting period of price stability occurred between March 1991 and December 2001 (see Ocampo, 2017 and 2021a).

In the case of Argentina, the gold standard proved to be a strong commitment device. The main reason it worked is that during the period 1900-1929, the rule of law and the constitutional principle of separation of powers –particularly as it relates to the independence of the judiciary– carried more weight than today, even though the quality of electoral democracy was weaker (voting franchise was more restricted). Economic and financial integration also strengthened the effectiveness of the gold standard. Institutional degradation started with the 1930s military coup and deepened with the 1943 military coup, but it was only after the democratically elected Peron dismissed the judges of the Supreme Court in 1947 that

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<sup>26</sup> Although at the time Perón did not hold any position in government he had won the February election handily and the military regime followed his orders.

institutional anomie reared its head and became a chronic feature of Argentine life (for the impact of this decision on institutional quality see Alston and Gallo, 2010).

### *Why did Convertibility fail?*

At the time Convertibility was effectively launched on April 1, 1991, the public believed that a law approved by Congress that prohibited the central bank from financing the government was a sufficient guarantee against politicians' attempts to reverse it. This belief was shared by most academic economists, who considered the new currency regime one of the strongest commitments ever made in Latin America (see Cukierman, Kiguel and Liviatan, 1992, p.15).

It is important to distinguish the factors that contributed to Argentina's economic crisis of 2000-2002 from the factors that explain why the Convertibility regime was abandoned. Both are related but conceptually different. A crisis can trigger demands for the reversal of a currency regime but whether those demands are met depends on political and institutional factors. Also, it is important to distinguish two phases of the crisis: before and after Convertibility was abandoned.

Regarding the origins of the 2000-2001 crisis, economists have mostly focused on growing imbalances in provincial finances, deteriorating fiscal sustainability at the national level, appreciation of the real exchange rate, currency mismatches in the banking sector, vanishing credibility, impact of foreign shocks, etc. (see Fanelli, 2002, Mussa, 2002; Hausmann and Velasco, 2002; Calvo, Izquierdo and Talvi, 2003; Della Paolera and Taylor, 2003; Damill, Frenkel and Juvenal, 2003; De la Torre, Levy Yeyati and Schmukler, 2003, Galiani, Heymann and Tommasi, 2003, López Murphy, Artana and Navajas, 2003; Powell 2002; Schuler, 2003; Kiguel, 2011; Cavallo and Cavallo Runde, 2017 and Teijeiro, 2022). Another strand of research focused on the institutional design of Convertibility. Hanson (1993) and Hanke (2002a, 2002b and 2008) argued that Convertibility's "deviations from currency board orthodoxy allowed it to behave more like a central bank than a true currency board in many important respects" (Hanke, 2002, p.2). For example, the Argentine central bank sterilized inflows of foreign capital,

which could not happen under an orthodox currency board. According to Hanke, it would be a mistake to conclude “that currency boards are inherently dangerous and bound to end in Argentine-like upheavals” (2008, p.56). In my view, however significant these deviations from currency board orthodoxy might have been, they don’t explain why Convertibility was reversed in such a traumatic way.

With few exceptions, most analyses did not place much weight on political factors. Powell (2002) made the case that a double vicious cycle of political risk “fed through to worsened economic fundamentals and these fed back to increased political risk.” Corrales (2002), a political scientist, argued that “two political shocks killed Convertibility: infighting between the Executive and the ruling party, and the ‘toughen-as-you-sink’ policy experiment undertaken by the IMF and the U.S. Treasury.” Della Paolera and Taylor (2003) emphasized how the conflict between the National government and that of the Province of Buenos Aires (governed by the opposition) contaminated the banking system, undermined internal convertibility and contributed to a lethal deposit run.

Institutional factors magnified the impact of these shocks and made the repeal of the Convertibility Law politically viable. First, the decision was made by a president that had publicly opposed the currency regime but had not been elected by a majority voters. Second, the design of electoral system weakened the link between voters and legislators. Third, pervasive institutional anomie prevailed. Finally, the central bank was *de jure* independent but after April 2001 became a *de facto* an agency of the Ministry of the Economy.

Institutional anomie is the main explanatory factor behind the failure of Convertibility. In April 1991, having experienced democracy for only seven years, most Argentines still believed in the constitutional separation of powers. However, by design, the still current electoral system (particularly the so called *lista sámana* or closed party list ballot) ensures that legislators are not beholden to voters but to the governing party bureaucracy. Although the 1994 constitutional reform made improvements by limiting the ability of the Executive to appoint or remove

Supreme Court justices, prior enlargement had allowed the Executive to pack the Supreme Court. Under President Menem the practice of politicizing the appointment of judges, particularly at the federal level, became common practice. Weakened *de jure* and *de facto* legislative and judicial constraints opened the doors to Executive overreach.

Despite these institutional flaws, the Convertibility Plan successfully confronted its first existential test in early 1995 with the “Tequila Crisis.” However, doubts started to emerge about its long-term viability (Zarázaga, 1995a, p.9). These doubts seemed overblown in mid- 1995 but prescient in 2001. A succession of foreign exchange crises in South-East Asia (1997), Russia (1998) and Brazil (1999) put a dent on capital inflows to emerging markets and limited Argentina’s growth prospects and the ability to finance its fiscal deficits. With a looming change of government, domestic politics, which challenged the sustainability of the currency regime, became an increasing source of uncertainty. Particularly damaging in this regard was the strong and public opposition to Convertibility within Menem’s own party led by Eduardo Duhalde, his most likely successor. Duhalde had the support of powerful industrial groups and union leaders.

Aware of the problem, President Menem doubled down and in early 1999 announced he would pursue an official dollarization, a project his economic team had been working on since 1997. Menem encouraged his ministers to accelerate the implementation of the initiative by paying salaries to public employees in US dollars (La Nación, 1999). But the political dynamics generated by a looming election worked against Menem’s dollarization plan. Both presidential candidates reacted unfavorably, and the project was soon abandoned.

In November 1999, Fernando de la Rúa of the opposition *Alianza* coalition won the presidential election partly because he publicly supported Convertibility.<sup>27</sup> In contrast, during the campaign,

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<sup>27</sup> Formed in 1997, the *Alianza* was a center-left coalition led by the UCR, Argentina’s oldest political party, and that also included FREPASO (*Frente País Solidario*), formed in the mid 1990s by dissident “progressive” factions of the Peronist Party, and the Socialist Party.

his opponent and eventual successor, Eduardo Duhalde of the Peronist Party, had openly voiced criticism of the currency regime and even advocated a sovereign debt default. More problematic were the deep divisions within the *Alianza* about Convertibility. Former President Raul Alfonsín, who had the support of most of the UCR's leadership, publicly railed against the currency regime. In an interview he gave in October 2000 he said that the 1930 military coup and Convertibility were "the two gravest" episodes in Argentine history in the 20<sup>th</sup> century and considered the latter "a deadly trap" (La Nación, 2001). Alfonsín's diatribes echoed the complaints of several industrial groups that since 1999 had been lobbying for a devaluation of the peso (Fair, 2017). On this issue, Alfonsín was much closer to Duhalde than to De la Rúa, since he could not conceive politics without soft money. Consequently, until the last days of the De la Rúa's presidency "the most relentless critic of the government's economic policy was the ruling coalition itself (Corrales, 2002, p.35)". One cannot underestimate the impact of the Alfonsín factor in the demise of Convertibility. In fact, when Dornbusch visited Argentina at the end of 2000, he said that one of the most important measures the government could take to stabilize the economy was to get Alfonsín "to shut up" (Dattilo, 2000).

Alfonsín's public criticism of Convertibility in late 2000 coincided with the resignation of Vice President Alvarez. The ensuing political crisis highlighted the deep fissure within the *Alianza* and triggered a bank run that with varying degrees of intensity would not stop until December 2001. Ironically and tragically, the reappointment of Domingo Cavallo, the "father" of Convertibility, as Economy Minister in March 2001 contributed to undermine the regime's credibility and sealed its fate. Since 1996 and as recently as 1999 Cavallo had publicly stated that the Convertibility Law needed to be modified to allow the peso to float (Lapper, 1999).<sup>28</sup> Not surprisingly, his appointment fueled expectations that the currency regime would change, which were immediately reflected in a significantly higher devaluation premium.

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<sup>28</sup> At the time, Cavallo's statement had a significant positive impact on the devaluation risk premium (see Schmukler and Servén, 2002).

One of Cavallo's first measures was to fire the president of the BCRA, with whom he had major policy disagreements. This not only made "a mockery of central bank independence" but also further eroded the "already shaky reputation of institutions in Argentina" (Powell, 2002). As a result, at the end of April the devaluation risk premium crossed the 10% threshold for the first time since the Tequila crisis. Two months later, Cavallo confirmed investors' worst fears when he successfully pushed through Congress an amendment to the Convertibility Law that changed the parity of the peso to an average of the dollar and the euro.<sup>29</sup> He also announced a subsidy to exporters that resulted in an effective devaluation of the peso.

It was evident after these measures that Convertibility was not an ironclad currency regime as voters and investors had been originally led to believe. To make matters worse, a restructuring of the public debt increased the banking system's overall exposure to the government at a time investors entertained increasing doubts about its solvency.<sup>30</sup> The restructuring also led to the automatic cancellation of a liquidity facility set by the Central Bank years earlier to confront a banking crisis, like the one it was about to start. By mid-July 2001, the devaluation risk premium reached its highest level ever.<sup>31</sup> The defeat of the *Alianza* in the October legislative elections sealed the fate of both De la Rúa's presidency and Convertibility.

The events of December 2001 and January 2002 confirmed that in Argentina, the decisions of a sitting president backed by the Peronist party, however arbitrary, prevail over any formal or informal constraints.<sup>32</sup> A glaring example of the high degree of institutional anomie was the fate of the so-called "Intangibility of Deposits" law, approved in literally three minutes by a

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<sup>29</sup> If Convertibility had survived, the inclusion of the euro would have led to a stronger appreciation of the peso, which was what these measures aimed to correct.

<sup>30</sup> Another unfortunate and unintended consequence of this restructuring was the automatic cancellation of a liquidity facility set up by the BCRA with international financial institutions.

<sup>31</sup> As Corrales (2002) pointed out, the confluence of external and domestic political shocks forced Cavallo "to try every possible gimmick" to save Convertibility but some key decisions he took during 2001 contributed to the opposite result. For Cavallo's own interpretation of the crisis see Cavallo (2002b).

<sup>32</sup> Non-peronist presidents do not have such luxury.

majority of the Argentine Senate in August 2001. This law was meant to increase depositors' confidence in the banking system by protecting their rights against any attempt by the government to confiscate them or change their contractual nature. It was hoped that this measure would prevent the steady deposit withdrawals that had started in October 2000 from turning into a full-fledged bank run. The new law only served to fool depositors for a short while. On January 7, 2002, the Argentine government froze all deposits and then forcibly converted all dollar deposits into pesos at a below market rate, which entailed a capital loss of at least 30% for their holders.<sup>33</sup> Eventually, the Supreme Court ruled that this measure was unconstitutional but very few depositors benefited from this ruling (see Marval, O'Farrell y Mairal, 2004 and Clarín, 2017).<sup>34</sup>

The only barrier to reversing Convertibility was its immense popularity among voters. However, this factor was not such a strong deterrent in December 2001. First, as already mentioned, legislators, particularly in the largest districts, had more allegiance to the party bureaucracy than to their voters. Secondly, the unfortunate and unnecessary resignation of De la Rúa, created a major political crisis that elevated Eduardo Duhalde to the presidency. Ironically, Duhalde had lost the 1999 election because he had publicly expressed his wish to repeal the Convertibility Law and devalue the peso. He became president through a palace coup and did what a majority of the electorate opposed.

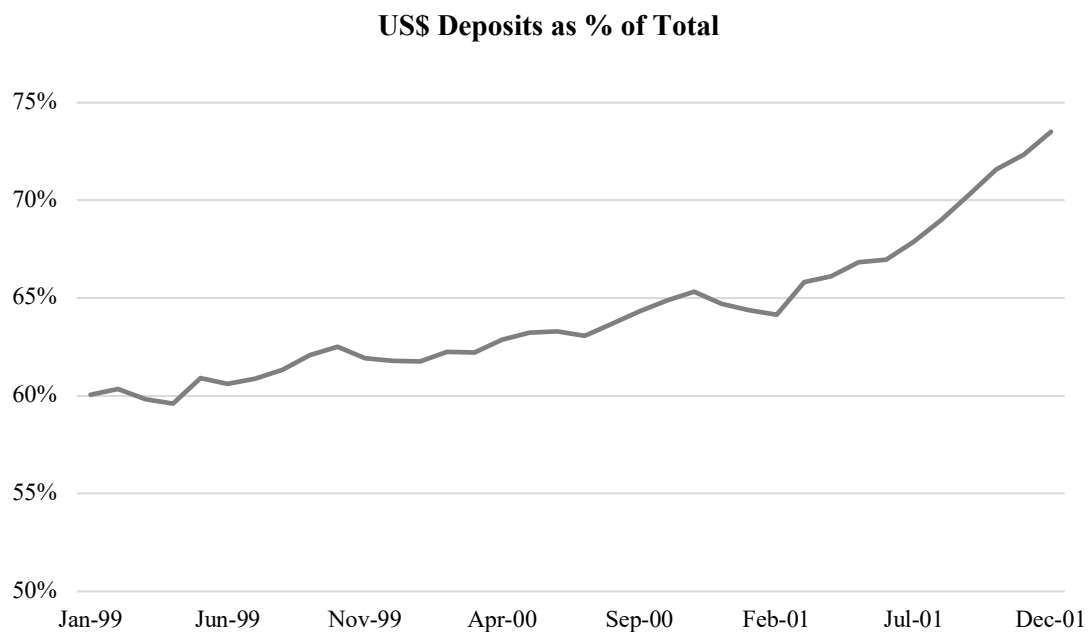
Without radical changes in the institutional and electoral framework, a currency board regime as structured by the original Convertibility law will remain a suboptimal commitment device for Argentina. Convertibility is different from dollarization in an important respect which made it particularly vulnerable to reversal: the bi-monetary nature of the banking system. With the

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<sup>33</sup> The government basically converted dollar bank deposits into pesos (“pesified”) at an exchange rate that resulted in a confiscation. As it is common in Argentina, the mechanism to repudiate the law was an “emergency law” approved by a majority of Congress.

<sup>34</sup> The nationalization of the private pension fund system in 2008 –which implied a significant confiscation of private savings– is another clear example of institutional anomie.

passage of time, financial dollarization increased. At the beginning of Convertibility, dollar denominated M3 was 33% of total M3, but by November 2001, the percentage had doubled, and US dollar deposits represented almost three quarters of total deposits.



Source: BCRA.

As Della Paolera and Taylor (1997, 2001 and 2003) pointed out, there is a potential lethal inconsistency between any fixed exchange rate regime such as a currency board, and a fractional reserve banking system with: a) a high ratio of inside money to outside money, and b) a large currency mismatch. As a result, external convertibility becomes unsustainable when the deteriorating quality of bank assets puts internal convertibility in doubt. In turn, internal convertibility becomes increasingly unsustainable when fears of devaluation increase due the currency mismatch in banks' balance sheets. Such inconsistency would be eliminated under dollarization because external convertibility disappears. However, even under dollarization a



banking system prone to originating bad quality assets (aka *gaucho banking*) will always pose a threat to financial stability.<sup>35</sup>

The probability of reversal of a currency board regime with a bi-monetary system can increase rapidly when an external shock and/or internal political opposition creates uncertainty. Lower credibility inevitably leads to a) a higher financial dollarization, and b) a growing devaluation premium on interest rates. Higher interest rates hurt the private sector and contribute to lower asset quality. At the same time, with a growing currency mismatch on bank's balance sheets, puts into question the soundness of the banking system and can trigger a bank run. The forces reinforce each other creating a dangerous feedback loop. Also, as dollar denominated bank deposits grow in importance, so does the political temptation to confiscate them, particularly if they are concentrated in a relatively small number of individual holders with are electorally irrelevant.

Reversing Argentina's currency board in 2002 required not only a devaluation of the peso but also freezing and then forcibly converting dollar deposits into peso deposits at a below market exchange rate. The magnitude of the political cost of this measure was directly proportional to how many voters held those deposits, which in December 2001 amounted to US\$ 42.3 billion. According to official figures, individual holders (i.e., excluding legal entities) accounted for 50% of this amount and were broken down as follows: 67,441 checking accounts; 3.5 million savings accounts; and 1.1 million CD accounts.<sup>36</sup> Concentration was high. The number of depositors with a balance of US\$3,000 or more was as follows: checking accounts, 14,320;

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<sup>35</sup> Narrow banking, or any other variant of the 100% reserve system, is not a viable option for Argentina, least of all in current circumstances if the government proceeds with dollarization. There are three major problems. First, it would increase the financial cost of dollarization (it would be necessary to replace M1 as opposed to the monetary base). Second, it would lead to a significant credit contraction, as banks would not be able to raise the necessary capital to sustain current loan levels. Third, it could lead to costly and lengthy litigation, which would generate doubts about reversal and thus undermine credibility.

<sup>36</sup> In contrast, the figures for peso denominated deposits as of December 2001, were as follows: 1,139,522 individual holders of checking accounts, 8,855,364 individual holders of savings accounts and 160,039 individual holders of time deposits.

savings accounts, 549,800; and time deposits, 903,376. These depositors bore the brunt of the government's decision to repeal the Convertibility law in January 2002.

The amounts effectively confiscated by the government can be estimated at US\$13 billion from holders of dollar deposits and US\$4.5 billion from holders of peso deposits. From an electoral standpoint, individual holders of dollar deposits represented approximately 18% of registered voters.<sup>37</sup> While it is true that holders of peso deposits also suffered a loss (in dollar terms), 30% were held by less than 100,000 individual accounts. Given that the devaluation risk premium increased considerably since July 2001, by the time the Convertibility Law was repealed in January, peso depositors could not hold any illusions about the dollar value of their peso savings. The figures provided above prove that the political cost of reversing Convertibility for Duhalde was tolerable since traditional Peronist Party voters were significantly under-represented among the holders of dollar deposits.

The reversal of the Convertibility Law in January 2002 suggests that strong voter support for a currency board regime with a bi-monetary banking system will not be an effective deterrent against reversal if: a) institutional anomie prevails (i.e., the Executive Branch can act arbitrarily and faces weak judicial or legislative constraints and *de jure* central bank independence is meaningless), b) financial dollarization is high, c) dollar deposits in the domestic banking system are held by a relatively small percentage of voters.

It is also important to point out that, given the resignation of President De la Rúa in December of 2001, the electoral system did not serve as an effective disciplining mechanism on his successor.<sup>38</sup> Duhalde reached the presidency via a palace coup he orchestrated with the help of Alfonsín, supposedly an ally of De la Rúa. He also counted on the support of most of the

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<sup>37</sup> In the 2003 election, Ricardo López-Murphy, a right-of-center politician got slightly over 3 million votes, which probably included most of the "victims" of the government's confiscation.

<sup>38</sup> As Cavallo (2002a) has forcefully argued, what happened in Argentina in December 2001 can be described as a civil and bloodless *coup d'état*.

Peronist Party, most labor union leaders and powerful business groups that had been actively lobbying for a devaluation of the peso since 1999.

The other deterrent to reversing Convertibility was its expected economic cost. At the end of 2000, Dornbusch had warned that a devaluation of the peso would accomplish little and would destroy the banking system (Dornbusch, 2001). This advice was ignored. It appears that Alfonsín and Duhalde (and the many economists, businessmen and politicians who advised and supported them) underestimated the economic consequences of devaluing the peso. In fact, they believed it would be a magical cure to a long recession. In his first press conference Duhalde's Economy Minister Remes Lenicov, specifically citing the 1967 precedent, stated that the planned devaluation of the peso would have "a reactivating effect" on the economy (La Nación, 2002; Edwards, 2002). By March, public officials at the Ministry of Economy reaffirmed "their confidence" that the contraction in GDP would "not be greater than 4.9%" (Oviedo, 2002). A month later, Remes Lenicov resigned. His estimates turned out to be widely off the mark: in 2002 GDP fell by a staggering 11% while the poverty rate jumped to 50%, setting an historical record.<sup>39</sup>

Several factors may have contributed to this error. First, the 1999 Brazilian devaluation, viewed by many as the example Argentina had to emulate, was followed by a relatively rapid economic recovery.<sup>40</sup> Second, during 2001, several foreign "experts" such argued that a devaluation and an orderly sovereign default would have a stimulating effect on an economy that had stagnated for almost two years (see Zarázaga, 2003). Be it as it may, Argentine politicians were able to

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<sup>39</sup> Argentina's GDP per employed person grew 23% between 2002 and 2005. However, Zarázaga (2006) estimated that it should have grown by about 35% during this period.

<sup>40</sup> By mid 2001 the evidence in emerging markets suggested that devaluations were contractionary in the first year and slightly expansionary afterwards with any real effects disappearing rapidly (see Edwards, 1985 and Kamin, 1988). The most immediate precedent was Brazil's devaluation in early 1999, which was followed by a rapid economic recovery (for Brazil's devaluation and recovery in 1999 see Fraga, 2000 and Gruben and Welch, 2001). There were many obvious reasons why the Brazilian experience could not be extrapolated to Argentina, particularly the high levels of dollarization in the banking system. However, some well-known economists suggested otherwise (Krugman, 2001).

blame the Convertibility regime for the 2002 mega recession when the true cause was the disorderly way in which they decided to scrap it.<sup>41</sup>

An important lesson from Convertibility is that in countries in which the political system has incentives to spend excessively and pro-cyclically and suffer from acute institutional anomie, any currency regime with a bi-monetary banking system will be inherently unstable and likely to be reversed. The bifurcation of the economy (and the banking system) into two currencies effectively reduces the electoral coalition that supports the currency regime while simultaneously establishes the political base for a confiscating coalition.

Why did the *Caja de Conversión* regime last longer than Convertibility? The table below compares the institutional environment under which each regime operated. Although the quality of electoral democracy was lower in the 1900-29 period, judicial constraints on the Executive Branch and compliance with the Supreme Court and Judicial decisions were stronger (i.e., institutional anomie was weaker). Another important factor is that during the period 1900-1929 the banking system was not bi-monetary, i.e., assets and liabilities were denominated in gold-backed pesos.

#### ***Caja de Conversión* (1900-1929) versus Convertibility (1991-2001)**

	<b>1900-1929</b>	<b>1991-2001</b>
<i>V-Dem Indices</i>		
Electoral Democracy (0 to 1)	0.4	0.8
Judicial Constraints on the Executive (0 to 1)	0.9	0.6
Legislative Constraints on the Executive (0 to 1)	0.6	0.7
Compliance with High Court Decisions (1 to 4)	3.1	2.6
Compliance with Judiciary (1 to 4)	3.2	3.1
<i>Aráoz</i>		
Institutional Quality (0 to 1)	0.9	0.6
Independence of the Judiciary (1 to 10)	10.0	6.2
Independence of the Monetary Authorities (1 to 10)	8.6	7.6

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<sup>41</sup> Besides this tangible economic cost, the disorderly exit of Convertibility also inflicted significant damage on the country's institutional fabric. The government infringed property rights with impunity.

Source: Aráoz (2011) and V-Dem Institute.

*Can Dollarization work where everything else has failed?*

The events of January 2002 confirm that in Argentina a currency board regime with a bi-monetary banking system is not a lasting ECD. The key question is whether this conclusion also applies to dollarization. Economists generally lump them together but as we tried to demonstrate in this paper, there are significant financial and institutional differences between both regimes.

As Powell (2021) pointed out, the “experience of the currency board is only partially informative regarding the possible success of dollarizing.” First, as observed by Mankiw (1998) and proven by the Argentine experience, under a currency board regime, the central bank can abandon the parity when facing a crisis of credibility, whereas this would be impossible under dollarization. Second, as noted by Chang (2000) and proven by the experience of Ecuador and El Salvador, it is “much more difficult” to reverse official dollarization than a currency board. Among other things, de-dollarization requires creating demand for a new domestic currency, a problem which proved insoluble to both Correa and Bukele. Most importantly, it requires taking dollars out of people’s pockets.

Despite this evidence, for a variety of reasons most Argentine economists oppose dollarization. The traumatic end of Convertibility probably has a significant weight in this opposition. According to Nicolini (2022) Argentina has not had sound monetary policies “since the early 1960s, except during Convertibility”. Consequently, it would be understandable “if someone came from abroad to tell us that what we should do is to dollarize because for 48 of the last 60 years we have used monetary policy in a perverse way. And the only decade where we used it in a non-perverse way was with Convertibility, which is also a way to lose control of monetary policy.” Despite this evidence and admitting that dollarization could “completely” eliminate inflation, he believes it would be unadvisable because it would leave fiscal policy as the only

stabilization tool (Nicolini, 2021). This would supposedly be a problem because fiscal policy has been “destroyed” (policymakers have proven to be incapable of using it effectively).

If Argentine policymakers have proved themselves incapable of employing fiscal policy and monetary policy effectively, it makes sense to look for an alternative. Argentine history shows that any policy rule would be better than arbitrary and ineffective discretion. History also shows that *de facto* central bank independence is a chimera in the presence of acute institutional anomie. However, in Nicolini’s view, the ideal way of reducing inflation “given the circumstances, is with explicit controls on the amount of money.” He does explain why such policy would be credible given Argentina’s political dynamics and, more importantly, given that it was implemented during the Macri administration with disastrous results. The Peruvian experience under Fujimori is not encouraging either.

Uribe (2022a and 2022b) also opposes dollarization. Although he admits it could bring down inflation it but would so at high cost in terms of “real volatility” and with a substantial loss of seignorage (which he estimates in the US\$1.5-3 billion range).<sup>42</sup> In his view, dollarization would be an explicit admission that “we cannot give our Central Bank independence and we need to delegate monetary policy to a foreign Central Bank that designs its monetary policy without taking us into account.”<sup>43</sup> As an alternative to dollarization, he proposes establishing central bank independence from “the first day of the next administration and without waiting for the Treasury to achieve fiscal sustainability” (Uribe, 2022a). Given that, a) historically the main enemy of central bank independence has been the Minister of Economy, and b) a law approved by Congress would not be effective in maintaining it, according to Uribe the president must become its “guarantor” (Uribe 2022a).

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<sup>42</sup> In relative terms the estimate is not high. It would represent approximately 0.5% of potential GDP, which is a relatively low cost to achieve price stability and establish firm conditions for sustained economic growth. Also, it assumes dollarization is forever.

<sup>43</sup> It is not clear why such recognition is a problem to the extent it is reflective of reality. Recognizing one’s limitations is the key to being able to resolve a persistent problem.

Such a proposal seems overly optimistic given that the only period of *de facto* central bank independence Argentina has had since 1943 started in September 1992 and ended in April 2001 with an arbitrary presidential decree. And during this period monetary policy was constrained by the Convertibility law. Also, it seems unrealistic to believe that today any reputable economist would accept the position of Economy Minister without having full control of the BCRA. Finally, given the realities of Argentina's electoral calendar, it is hard to believe that the promises of a well-intentioned and determined president could provide a more effective commitment device than a well-designed dollarization scheme. As to the latter's impact on real volatility it is unlikely that to be higher than the one experienced with discretionary policies.

According to Sturzenegger (2023) dollarization has three important disadvantages. First, seignorage losses, which he estimates at 10% of GDP. This figure doesn't make any sense. As Cukierman, Kiguel and Liviatan (1992), in a scenario of price stability, seignorage revenues generally amount to around 1% of GDP annually.<sup>44</sup> Second, Sturzenegger argues that the dollar moves in the exact opposite direction in which the peso should optimally move "because when a global crisis occurs, the peso would appreciate instead of depreciating." However, Ecuador's experience since 2000 suggests that this concern is overblown. Sturzenegger's arguments fall into a "nirvana fallacy." Despite his own experience to the contrary, he believes that a realistic alternative to dollarization is a flexible exchange rate regime with an independent central bank that follows optimal intervention rules, something that has never happened in Argentina. Finally, and most importantly, Sturzenegger believes dollarization can be easily reversed. "In Argentina anything can happen", he concludes. "And, if it [dollarization] is reversible, then it would not generate the credibility improvement that we long for." This logic would also apply to any other regime, particularly based on having an independent central bank.

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<sup>44</sup> The caveats raised by Chang and Velasco (2002) when estimating the seignorage losses generated by dollarization are applicable to all these arguments.

While it is true that almost anything can happen in Argentina and that it would be dangerous to underestimate the power of the “devaluation lobby”, a properly designed dollarization can significantly reduce the risk of reversal in the short term. It would also be wrong to conclude that dollarization would be easily “reversible” based solely on the experience of Convertibility. Second, as explained above, another effective deterrent to reversing dollarization would be the negative impact on economic activity. Finally, while it is true that, as pointed out by Velde and Veracierto (2000), in a sovereign nation “no commitment device is absolute”, in anomic and fiscally profligate countries proper institutional design can make dollarization the most effective commitment device available to policymakers. Finally, as Cukierman (1993) the stronger commitment is the one that imposes the highest political cost on reversal. As the Ecuadorean experience demonstrates no other regime has a higher political cost of reversal than dollarization.

## **5. Conclusions**

Over two centuries of Argentine monetary history, high, persistent and volatile inflation has been the norm. Lasting stability was only achieved between 1900 and 1943 when: a) the value of the peso was fixed by law to an international currency standard, and/or b) there was a competent and *de facto* independent central bank. The experience of Convertibility shows that with high levels of institutional anomie –a legacy of enduring populism– any monetary and banking regime in which the dollar co-exists with the peso will be inherently unstable and highly vulnerable to reversal, therefore unlikely to be credible.

The dynamics of the electoral calendar –with mid-term elections every two years– and Argentine politics make it very unlikely that even a well-intentioned and determined president will be able to bring inflation down rapidly and permanently and complete all the reforms needed to put the economy on a path of sustainable growth if the peso survives. As long as *de facto* central bank independence remains chimerical, the intersection of macroeconomically and politically viable stabilization plans with traditional policy tools is an empty set.



Convertibility also proved that, in Argentina at least, eliminating inflation is the only policy that consistently garners the support of a majority of voters. Therefore, achieving price stability is a necessary political pre-condition for a program of fiscal adjustment and structural reforms.

It would be naïve to assume that fiscal responsibility will seep into Argentine politics without an external disciplining factor. No other currency regime can impose a stricter discipline than dollarization. In a relatively well functioning electoral democracy, in the medium and long-term the best insurance against reversal of dollarization is strong voter support. In Ecuador dollarization has lasted more than two decades despite having suffered the impact of several shocks and attempts by a populist government to undermine its financial soundness and introduce a new currency. In El Salvador, dollarization not only fiscally constrained ten years of left-wing government but has also resisted Bukele's plans to introduce a new currency. Although neither country has reached a macroeconomic nirvana, it is hard to argue that if they had they kept their own currency they would be better off today. Even with a decade of virulent populism, Ecuador has grown faster and with a significantly lower inflation rate than Argentina, which during this period also experimented with populism and a variety of discretionary policy regimes.

In the short-run, certain design features can strengthen the effectiveness of dollarization as a commitment device. By enhancing credibility, these features can help it deliver more rapidly the twin goals of lower inflation and economic growth, which in the medium and long-term, strengthen "voter insurance" against reversal. Over time, both elements virtuously reinforce each other to reduce the probability of reversal.

To conclude, in countries that have experienced for decades high, persistent, and volatile inflation, low or negative GDP growth, high levels of *de facto* dollarization and low credibility due to time-inconsistency disease and acute institutional anomie, a well-designed *de jure* dollarization scheme offers the best, and possibly only, hope for lasting price stability and growth. Endemic populism has pushed Argentina into a sub-optimal situation in which there

is a very limited menu of viable policy options to stabilize the economy with any chance of success. Among such options, dollarization offers the most realistic chance of delivering lasting price stability and sustained economic growth. History suggests any associated costs are unlikely to be higher than those imposed by a discretionary policy regime.

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