GETTING GLOBAL MONETARY POLICY ON TRACK

EDITED BY

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GLOBAL AND EMERGING MARKETS

INTRODUCTORY REMARKS

Peter Blair Henry

So we transition now from Europe to emerging markets. We're very fortunate to have a great panel. I will not introduce the speakers in detail, their bios are in the program. But we're very fortunate to have Emilio Ocampo from Universidad Centro de Estudios Macroeconómicos de Argentina, Juan Pablo Nicolini from the Federal Reserve Bank of Minneapolis and Universidad Torcuato Di Tella, Zhiguo He from Stanford University, and Ross Levine from Stanford University. And so we'll begin with Emilio Ocampo.

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

Emilio Ocampo

> *Once credibility has been lost, economists don't know much about how to restore it.*
>
> —Finn E. Kydland (2004)

> *A noncredible policymaker may have to tie himself firmly to the mast to get any results.*
>
> —Guillermo A. Calvo (2001)

Fifty years ago, before Congress, Milton Friedman argued:

> 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. US policy has been bad, but their policies have been far worse. There are 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 [*sic*] it would

The views presented here do not necessarily represent those of Universidad del CEMA (UCEMA).

> 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, 127)

Not much has changed in Argentina in this respect since Friedman's testimony. In fact, when it comes to inflation, things have gotten worse. The abandonment of Convertibility in January 2002 marked the beginning of a new inflation cycle that peaked in December 2023 with a 25% monthly inflation rate. During the 2023 presidential campaign, the centerpiece of Javier Milei's platform was official dollarization, which prompted a heated debate among economists about its advantages and disadvantages (see Nicolini 2021 and 2022; Ocampo and Cachanosky 2022; Uribe 2022a and 2022b; Sturzenegger 2023). It is unclear whether Milei's government will proceed with dollarization. The current strategy to eliminate inflation involves a crawling peg with tight fiscal and monetary policy, as a "transition towards a new monetary regime (involving currency competition)" (International Monetary Fund 2024).

The idea of adopting the dollar as legal tender is not new. W. S. Jevons (1875) was one of its earliest proponents. At the beginning of the twentieth century, several countries in Central America adopted the dollar and kept it until after World War II (Helleiner 2003 and 2005). In the early 1970s, Friedman (1972) recommended dollarization as the best option for developing countries with a history of high and volatile inflation. However, it was not until the late 1990s that dollarization was seriously considered in policymaking and academic circles (see United States Congress 1999a and 1999b). The debate about its cost and benefits was largely prompted in early 1999 when President Carlos Menem announced that Argentina would adopt the dollar as legal tender. Although it never happened, Ecuador dollarized in January 2000 and El Salvador followed suit twelve months later.

The terms of the dollarization debate as defined a quarter of a century ago can be summarized as follows. On the cost side, dollarization can entail (1) loss of seignorage revenues; (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. The potential benefits include (1) eliminating inflation permanently; (2) lower transaction costs; (3) lower interest rates due to the elimination of devaluation risk; (4) a more favorable environment for investment and growth due to price stability; (5) elimination of currency mismatches in the country's balance sheet; and (6) a reduction of country risk and rollover risks of sovereign debt. Two related implementation issues are (1) whether certain ideal preconditions 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), that is, a mechanism, technology, constraint, or process that can credibly resolve the time inconsistency of economic policy (Kydland and Prescott 1977; Calvo 1978).

Regarding the need for preconditions, one side 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 preconditions. In fact, one of the key reasons to dollarize is a proven inability to attain such preconditions. In other words, if the ideal preconditions are present, there is no need to dollarize.

If inflation is essentially a fiscal phenomenon, 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. However, the same argument can be made against central bank independence (Castellani and Debrun 2005).

Interestingly, Ecuador's government dollarized in January 2000 with a fiscal deficit, and during his ten-year presidency, Rafael Correa (2007–17) doubled government spending as a percentage of GDP, which led to persistent and substantial fiscal deficits. However, the annual inflation rate during this period averaged 3.8%. If dollarization is an ECD, the debate about its costs and benefits can be summarized as a trade-off between flexibility and credibility. Without credibility, the benefits of flexibility are nonexistent.

The relevance of the above considerations also depends on the rationale for adopting the dollar as legal tender. If the decision is driven by the need for greater trade integration, whether dollarization is an ECD would not be much of an issue. On the other hand, if the objective is to achieve lasting price stability, which is the case in Argentina, it is the central issue.[1]

Mostly absent from 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).[2] Two institutional factors can alter such probability: (1) how the banking system is structured (fractional vs. 100% reserves) and (2) whether the central bank is eliminated.

Argentina's traumatic exit from Convertibility in January 2002 dealt a blow to proponents of dollarization and hard pegs and bolstered the case for flexible exchange rate regimes (Cohen 2003; Jameson 2003). Among academics, the debate was settled in favor of the latter: flexibility became more valuable than credibility. But, as I will explain below, the demise of Convertibility had to do more with politics than economics. Be that as it may, the profession did not hold high hopes for the survival of dollarization in Ecuador (January 2000) and El Salvador (2001).

At the beginning of the twenty-first century, 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 on the United States and therefore was not a useful comparable.[3] We now have a substantial, although still insufficient, dataset to reevaluate many of the unresolved questions raised in the debate.[4]

The objective of this paper is twofold. The first is to reopen the debate about dollarization in light of new evidence and a reassessment of the collapse of Convertibility. The second is to argue that dollarization is the most effective commitment device for countries that suffer from two conditions rarely explored by economists: "time-inconsistency disease" (TID), as described by Kydland (2004), and acute institutional anomie (AIA), as articulated by Nino (1992) and Waldmann (2004 and 2006).

The countries in this category are outliers in terms of inflation and GDP growth. Within this group, Argentina is an outlier given its GDP per capita, level of education, and institutional development. Given the relatively low morbidity of both conditions, it is reasonable to question the usefulness of studying their origins and possible cures. There is an advantage in studying the experience of countries that exhibit extreme economic and institutional pathologies because the nature of their interaction is more visible.[5] The rise of populism in Europe and North America in the last twenty years confirms that advanced economies are not immune to such pathologies. In 1980, Paul A. Samuelson warned that Argentina's experience with endemic populism perhaps offered a window into their future (see Ocampo 2021b). Until recently, this prediction seemed widely off the mark.

Time-Inconsistency Disease and Institutional Anomie

Can official unilateral dollarization be a "solution" for countries with a long history of high, persistent, and volatile inflation such as Argentina, Nigeria, Venezuela, or Zimbabwe? A typical characteristic of these countries, whether democratic or autocratic, is a history

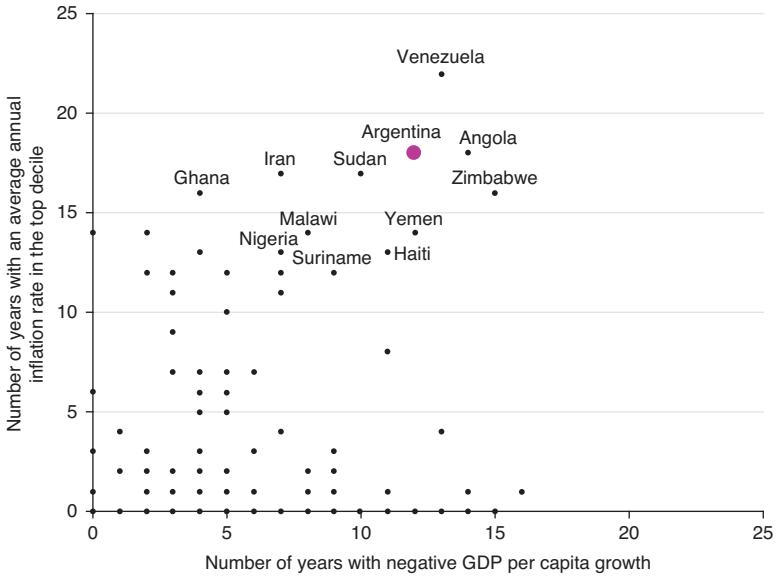

FIGURE 6.1. Stagflation outliers 1998–2023.

Source: Graph created by the author based on data from International Monetary Fund World Economic Outlook as of April 2024 and Inflación Verdadera data for Argentina between 2008 and 2015 (http://www.inflacionverdadera.com/argentina).

of policy or reform reversals. Policymakers, even if well intentioned, cannot fulfill their promises and, as a result, they have zero credibility.

The graph in figure 6.1 shows, for the last quarter of a century, the number of years in which a country had negative GDP per capita growth (horizontal axis) and an annual inflation rate in the world's top decile (vertical axis). The clearest stagflation outliers are Angola, Argentina, Nigeria, Sudan, Venezuela, Yemen, and Zimbabwe. If we plot the data for the period 1966–90, a different picture emerges. The inflation outliers include Argentina, Bolivia, Brazil, Chile, Democratic Republic of the Congo, Israel, Peru, Turkey, and Uruguay. The only country that is a clear stagflation outlier in both periods is Argentina.

Time-Inconsistency Disease (TID)

Kydland (2004, 2008, and 2014) coined the term "time-inconsistency disease" (TID) to describe a situation where policymaking is driven by short-term political and/or economic considerations. Typical symptoms of the disease are high, volatile, and persistent inflation and recurrent sovereign debt defaults. TID means loss of credibility and a persistent inability to recover it. Policymakers have no ECDs under domestic jurisdiction, and externally imposed commitment devices tend to be politically unviable. In such situations, to eliminate inflation rapidly and permanently requires policymakers to "tie their hands" with a currency board or a currency union (Calvo 2000, 4).

Of the three countries that dollarized in the twenty-first century, only Ecuador and Zimbabwe seem to have been suffering from TID. In Ecuador, dollarization was accompanied by structural reforms that were reversed under the presidency of Rafael Correa (2007–17). 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 an 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, that is, it was an ECD. Zimbabwe, which in early 2019 fully reversed its decade-old dollarization, provides a counterexample. 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 toward explaining whether dollarization can serve as an ECD.

A potential cause for TID in democratic societies is the prevalence of hyperbolic discounting among a majority of voters (Thaler 1981; Laibson 1997). In such a situation, if electoral democracy works relatively well, politicians will act in accordance with the preferences of a majority and the political process will favor fiscal profligacy, particularly in the form of higher public consumption expenditures. If time-inconsistent voters constitute a majority, it is also likely that politicians will adopt policies that promote private consumption expenditures at the expense of private investment (see Drometer 2006; and Bisin, Lizzeri, and Yariv 2015). In Latin America, such policies have been traditionally associated with populism (Dornbusch and Edwards 1991).[6] The available evidence suggests that by magnifying an economy's structural imbalances (monetary and fiscal imbalances, relative prices, exchange rates, etc.), populism tends to exacerbate TID. By introducing volatility and uncertainty, populist policies also tend to exacerbate hyperbolic discounting among voters, setting off a vicious, mutually reinforcing policy loop.

As Kydland noted, TID can be difficult to cure. Only an ECD can restore credibility. But, by definition, with TID, an ECD is not available. In such a scenario, even the best-intentioned politicians pay the cost of past misdeeds, and their policy announcements lack credibility.

Institutional Anomie

TID is related to another condition that has seldom been explored by economists: institutional anomie. The term *anomie* dates to ancient Greece, but was popularized in the late nineteenth century by French sociologist Émile 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 recur-

rent 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, and the latter, the general population. According to Nino, "dumb" social anomie occurred when noncompliance with rules led to collective results that were inferior to those achievable with compliance. Building on Nino's work, Waldmann (2004 and 2006) argued that the anomic state was common throughout Latin America but singled out Argentina as a paradigmatic case. 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 exists, government officials not only fail to enforce the laws, but break them whenever it suits their purposes. As to the executive, when laws constrain its behavior, it ignores them with impunity thanks to a compliant judiciary or "forces" a subservient congress to modify or abrogate them. This happens when de jure separation of powers is not operational.

In the present context, the clearest evidence of AIA is the coexistence of de jure central bank independence and high, persistent, and volatile inflation.[7] As Tucker explained, "In a fiat money system the independence of the monetary authority is a corollary of the higher order, constitutional separation of powers" (2016, 6). In the presence of AIA, de jure central bank independence is irrelevant and de facto central bank independence a chimera. Such a scenario renders the traditional solution to time inconsistency in monetary policy ineffective (Rogoff 1985).

Argentina: A Paradigmatic Case

Acute institutional anomie eliminates the possibility of curing TID. Endemic populism promotes time-inconsistent policies and

institutional anomie, triggering a vicious circle. Not surprisingly, Argentina is also the paradigmatic case of endemic populism and institutional anomie. Since 1945, the country has had only forty years of functional electoral democracy and fifteen presidential elections. Populism has had a 50% success rate at the polls. This success seems to be associated with the upswing of commodity cycles (Ocampo 2015a and 2015b).

According to Kydland (2004), the origin of TID in Argentina can be traced to "past hyperinflations, devaluations, deposit freezes and defaults on government obligations." This in turn explains the country's poor growth performance since 1945. As mentioned earlier, hyperbolic discounting by voters and policymakers is one of the factors that may explain TID. In a recent study of sixty-one 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 Argentina suffered an "institutional imbalance" due to the gradual absorption of Congress's normative and legislative prerogatives by the executive branch (73). In his view, this partly explained Argentina's economic decline since 1945. Waldmann (2004 and 2006) agreed that in Argentina, social and institutional anomie was particularly strong.

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 and 2024) provides the most updated survey of de jure central bank independence (CBI). In the case of Argentina, the

TABLE 6.1. Comparative measures of de jure central bank independence (2008–15).

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.

Note: UW is unweighted; W is weighted.

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

CBI index dates to 1935, when the central bank was created as a mixed-ownership entity. During the first Perón regime (1946–55), Argentina had higher de jure central bank independence than the United States or Switzerland.[8] During the regime of Cristina Fernández de Kirchner (2007–15), Argentina's index of de jure CBI was close to the world median. According to certain methodologies, it was comparable to that of the US Federal Reserve and in all cases higher than the Bank of England's (see table 6.1). During this period, Argentina's inflation rate was among the ten highest in the world.

Most people in Argentina take institutional anomie as a fact. Recent surveys by Latinobarómetro indicate that the country has the lowest percentage of respondents who consider judges to be law-abiding in Latin America. 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. As can be seen in table 6.2, such indices are significantly lower in Argentina than in any of her neighbors. Interestingly, during the 1900–1929 period the opposite was true, at least with respect to the judiciary. Constraints on the executive were also higher than at present, which suggests institutional anomie can be moderated.

TABLE 6.2. Indicators of institutional anomie.

	Legislative constraints on executive				Judicial constraints on executive			
Period	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: Author, based on data from V-Dem Institute.

The cultural roots of Argentina's institutional anomie can be traced back to the colonial period. Throughout the Spanish colonial empire, the practice of "obeying but not complying with the law" became institutionalized (Fernández and Monteserin 2014; Wasserman 2022, 12–13). During his visit to Argentina in 1833, Charles Darwin observed clear signs of institutional and social anomie: "Police and justice are quite inefficient. . . . 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, 171).

Darwin also noted that these attitudes were related to *caudillismo* (the cult of the strongman), another legacy of the Spanish conquistadors. As I have explained elsewhere, this 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.

One factor may explain why institutional and social anomie manifested themselves more strongly in Argentina than in other Latin

American countries: Buenos Aires, the capital of the Viceroyalty of the River Plate, was the center of contraband in the Spanish South American colonial empire. Smuggling was the backbone of its economy. Breaking the law was an economic necessity. The local elites not only dominated the contraband business but were embedded in the local government structure (Moutoukias 1988). As observed by one of the first sociological studies of Argentina, "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, 208).[9]

Juan Bautista Alberdi, who drafted Argentina's first constitution in 1853, believed a century of strict enforcement would be necessary to completely eradicate the cultural legacy of Spanish colonialism (1854, 57). After its enactment, Argentina started a virtuous institutional and cultural evolution culminating 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 so 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 endemic populism, which in many ways incarnated many institutional and cultural vices reminiscent of the Spanish colonial system. All that it 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. Perón not only emulated Mussolini's corporatist system, but also, thanks to the decisive influence of his wife, institutionalized nepotism, clientelism, and patrimonialism, typical features of the Spanish colonial system. The Perón regime pursued economic policies that reinforced and promoted cultural values that supported it (Ocampo 2018). As populism became endemic, social and institutional anomie gradually coagulated into 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 forged a status quo that was resistant to change. Persistent instability also infected voters with time inconsistency, which in turn contributed to the electoral dominance of populism. Argentina's history since 1945 provides strong evidence in support of the hypothesis that persistent populism exacerbates time inconsistency, and, by fostering institutional anomie, degrades the mechanisms that could moderate it.

Dollarization as an ECD: Theory and Evidence

In the present context, a commitment device is any formal or informal constraint on the ability of governments and/or politicians to renege on their promises or reverse existing policies due to short-term considerations. Not all commitment devices are equally strong. An ECD is a device that achieves the objective of reducing or eliminating time inconsistency. Commitment devices 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. Informal domestic devices originate in customs and are enforced by a disciplining electorate or a strong interest group that is highly intolerant of inflation, for instance the banking system (Posen 1995 and

TABLE 6.3. A menu of commitment devices.

	Internal	Mixed	External
Formal	CB independence	Currency union (e.g., eurozone)	Bond covenants IMF conditionality
	Fiscal rules	Gold standard	External supervision (e.g., Austria 1922)
	Currency board	Dollarization	International agreement (e.g., Bretton Woods)
Informal	Voter intolerance		Reputation
	Banking lobbying		Financial markets High trade and financial integration

1998). In a working democracy, the strongest commitment device is the vote of the majority. However, as discussed in the previous section, certain voter preferences such as hyberbolic discounting can contribute to time inconsistency. Sometimes, countries have no option but to consider commitment devices imposed from abroad (Santaella 1993, 589), but such commitments tend to be highly unpopular with the electorate. See table 6.3.

Until 1914, the gold standard was the most common ECD 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, International Monetary Fund (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, Caballero and Dornbusch (2002) proposed a rescue plan for Argentina inspired by the Austrian 1920s scheme. As with many other ECDs, this one was not politically viable.

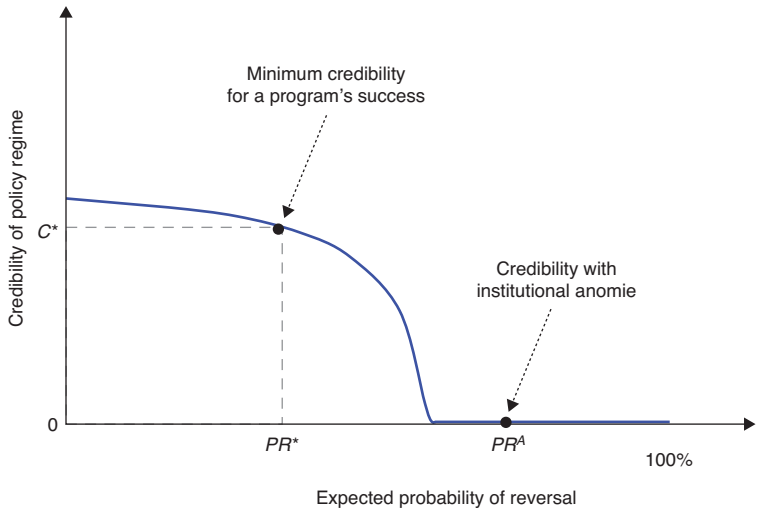

FIGURE 6.2. Credibility as a function of probability of reversal.

In countries that suffer from TID and AIA, such as Argentina, monetary sovereignty is costly because policymakers lack credibility, and, by definition, no domestic ECD exists. Even the best-intentioned policymakers with well-designed stabilization plans cannot generate the minimum credibility needed for success. 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 graph in figure 6.2 illustrates this point. For policies to be successful they must generate a minimum credibility of C^*. However, given chronic TID and AIA, the expected probability of reversal is too high. Policymakers are stuck in a suboptimal situation, PR^A, and therefore have no way of generating sufficient credibility to successfully eliminate inflation.

Dollarization as a commitment device has an internal and an external dimension. By eliminating the possibility of monetizing fiscal deficits, it can serve as an ECD. Often conflated with a currency board, it is essentially different. I shall explore these differences in more detail in the section that explains the demise of Convertibility.

As mentioned earlier, the structure of the banking system and the role played by a central monetary authority under dollarization are not trivial matters. Even under dollarization, any fractional reserve banking system with a high ratio of inside money to outside money and a tendency to originate assets of poor credit quality would be unstable and prone to bank runs. Therefore, to be an ECD, dollarization must, among other things, be designed not only to ensure financial stability, but also to (a) minimize the degree of "crowding out," and (b) prevent policymakers from misappropriating banks' reserves to finance persistent budget deficits. In their analysis of the experience of Ecuador, Romero and Sandoval (2019) concluded that it is advisable to eliminate the central bank.

Reassessing an Old Debate with Recent Evidence

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" (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" (300).

Cukierman, Kiguel, and Liviatan (1994) 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 or she is "to successfully affect inflationary expectation" (3). Dollarization was the "strongest form" of commitment to a fixed exchange rate but was not irreversible. It

could be abandoned, "in the same way that countries in the past renege [*sic*] from strong commitments, such as during the gold standard" (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" partly explained why policymakers had not pursued dollarization.

In January 1992, at an event organized by the World Bank in Washington, DC, several 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, 83).

Leading the skeptical camp, Fischer revisited his 1982 paper and argued that, although dollarization and currency boards enabled "policymakers to impose discipline on themselves or make the government more credible than any other system," governments "determined to break legal arrangements can usually do so" (1993, 8, 9). 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" not specified (1993, 11). Overall, he believed dollarization and currency boards could effectively discipline governments (27). The decision of the Argentine government to default on its debt in December 2001 and scrap the currency board the following January refuted such an optimistic view. In countries that suffer from TID and AIA, legal constraints, including constitutional amendments, tend to be insufficiently binding.

Commitment depends not so much on legal constraints as on political constraints. Instead, as Cukierman observed, "the commitment level is determined by the political cost of breaking it" (1993, 33).

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

The Tequila Crisis rekindled the debate. Zarazaga (1995a) warned that currency boards or other legal constraints on policymakers' discretion were ineffective mechanisms to resolve time inconsistency. In his view:

> 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. (Zarazaga 1995b, 21)

The experience of Ecuador, El Salvador, and Panama with dollarization since 2000 suggests that this view was overly pessimistic. Also, as already mentioned, a currency board regime is different in key respects from a dollarization regime. Therefore, any conclusions about the latter, particularly if drawn from the Argentine experience, have limited value.

By the end of the 1990s, partly due to President Menem's announcement that Argentina would adopt the dollar as legal tender, the dollarization debate again heated up. Mundell argued that for

a developing country, dollarization provided "a rudder for its monetary policy, a stable rate of inflation, and discipline for its fiscal policy" (Friedman and Mundell 2001). In Dornbusch's view, dollarization is a way of "outsourcing" monetary policy to a credible central bank and "gaining credibility and stability automatically" (International Monetary Fund 2000, 340). The gains from abandoning the national currency came 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 2001).

Velde and Veracierto (2000) argued that in the presence of time inconsistency, dollarization could achieve the best outcome for society. Alesina and Barro (2002) argued that the "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" (435). Alesina, Barro, and Tenreyro (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 (308).

Calvo and Reinhart (2001) also came strongly in favor of dollarization. They argued that in emerging markets, in which 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. According to Mendoza (2000), 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, and (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 the elimination of policy uncertainty and 4.6% through weakening of credit constraints. He concluded that dollarization could cure TID. 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 noncredible policymaker may have "to tie himself firmly to the mast" to get any lasting results in terms of price stability.

The opposite argument was articulated by Schmitt-Grohé 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 based on a model calibrated for the Mexican economy and simulated three external shocks: terms of trade, an interest rate hike, and import-price inflation.[10] They concluded that dollarization was the least successful of all the monetary regimes they considered. In further support of their argument against dollarization, they also raised the issue of conflicting fiscal policies at the national and provincial levels.

The Ecuadorian experience refutes these arguments. 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.[11] Ecuador's annual inflation rate has averaged 3% (even lower than in the United States in recent years) and, up until now at least, a large majority of the population supports maintaining the dollar as the only legal tender. Rafael Correa tried to introduce a new digital currency and failed.

He also attempted to circumvent the financial constraints imposed by dollarization. He temporarily achieved this objective by selling forward oil contracts to China and expanding the central bank's balance sheet (Erráez and Reynaud 2022). His successor and erstwhile vice president, Lenín Moreno, who took office in 2017, had no option but fiscal austerity and a sovereign default.

With respect to the issuance of provincial quasi-monies, it was not a problem in Ecuador, where despite a unitarian constitution, provincial governments are allowed to issue their own debt. With respect to Argentina, issuance of provincial quasi-money has been a recurrent issue under fixed and floating exchange rate regimes (see Theret 2020). The key point is that the monetary impact of such issuance under dollarization is different from that under a currency board: a US dollar–denominated short-term note issued by a profligate Argentine provincial government would always trade at a discount unless its yield reflects the risk of default (if such notes do not constitute legal tender, no one is obligated to accept them at face value).

In connection with the above, Cooper and Kempf (2001) analyzed dollarization as a commitment device when a conflict exists between the federal and provincial governments and concluded that dollarization could effectively serve as an ECD. Gale and Vives (2002) analyzed dollarization in the context of recurring banking crisis and moral hazard. They concluded it could "alleviate the commitment problem faced by a central bank" when the costs of establishing a reputation for the central bank are high and the risk of moral hazard is moderate or low. Although generally not sympathetic to dollarization, Chang and Velasco (2002) raised an important point sometimes overlooked in the debate. The theoretical potential losses of seignorage caused by dollarization are irrelevant except in the context of a realistic and viable set of options available to policymakers to stabilize the economy. In their view, the option to dollarize the economy may be valuable if a government is incapable of generating credibility. Makarski (2014) argued that dollarization

served not only as an ECD but also, and more importantly, as a signaling device that could reduce macro uncertainty.

Using an asymmetric two-country model, Guidotti and Powell (2002) argued that unilateral dollarization would not eliminate devaluation risk. In their view, in the case of Argentina, the credibility of dollarization depended critically on signing a monetary treaty with the United States that ideally had to include (a) a seignorage-sharing agreement, and (b) a backstop liquidity facility. Although undoubtedly such a treaty would bolster the credibility and effectiveness of an official dollarization scheme, it proved politically unviable in the United States. Also, the experiences of Ecuador and El Salvador show that unilateral dollarization is not only viable but also resilient in the face of adverse internal and external shocks.

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. However, a comparison of Ecuador to Argentina suggests that dollarization with populism and no reforms is superior to populism with a domestic currency and fiscal dominance.

Cabral (2010) 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 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. 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 (certainly in the case of Argentina). Third, the evidence does not necessarily support the argument in favor of flexible exchange rates,

particularly for countries suffering from TID and AIA. As pointed out by Dornbusch (2001), in such countries "exchange rates have been the dominant instrument of destabilization."

The experience of Ecuador since 2000 proves that a dollarized economy is not necessarily more vulnerable to asymmetric shocks than a nondollarized one. In the last twenty-two years, the Ecuadorian economy has 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. Most importantly, it endured ten years of left-wing populism. Cachanosky, Salter, and Savanti (2022) concluded that even if dollarization does not improve economic outcomes, "it can perform a useful role in credibly constraining the state from populist policy excesses."

Cachanosky, Ocampo, and Salter (2023) highlighted certain design features that would make dollarization more effective as a commitment device: (1) eliminating the central bank, (2) liberalizing the banking sector, and (3) ensuring bank reserves cannot be used to finance recurrent fiscal deficits. With TID and AIA, 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.

In the three countries that dollarized in the twenty-first 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 proved successful only in Zimbabwe, where in March–April 2019 the government implemented complete dedollarization (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 reintroduction of a domestic currency as early as 2012 "if the macroeconomic situation allowed" (International Monetary Fund 2011, 18). This announcement obviously made dollarization less effective as a commitment device. Not surprisingly, the reversal of dollarization in Zimbabwe originated in recurrent fiscal imbalances (International Monetary Fund 2020, 5).

The experience of Ecuador yields other 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).[12] 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 in order to get reelected for a second term. He had more control over the legislature and the judiciary than Cristina Fernández de 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 was due to the simple fact that the dollar was more popular than he was (Calderón de Burgos 2007). The same voters who overwhelmingly reelected 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 dedollarize the economy with the introduction of a central bank digital currency (see Arauz, Garratt, and Ramos F. 2021). However, he successfully undermined the financial viability of dollarization by appropriating bank reserves to finance growing fiscal deficits (Romero and Sandoval 2019; Erráez

and Reynaud 2022). These measures imposed a heavy burden on the Ecuadorian 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 (Alvarez, Argente, and Van Patten 2022). As in the case of Ecuador, these efforts had a significant impact on the economy. Since the 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 nonindependent 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 2023). The reason is simple. Freezing bank deposits and appropriating bank reserves are two of the most effective measures to dedollarize, 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 electorate. An ample majority of voters refused to replace their dollars with the bogus currencies sponsored by their governments.

The gradual reversal of dollarization in Zimbabwe also yields valuable lessons. First, it confirms that it is macroeconomically 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 2009–18, increased to 521% in 2019 and has remained one of the world's highest since then.[13] Second, the political cost is not as high when electoral democracy is not fully operational.

In contrast to a currency board, reversal of dollarization hurts not only bank depositors but the entire population. Everybody would feel its impact, since it would entail taking dollar bills out

of people's pockets.[14] Politicians can estimate ex ante the electoral cost of doing so through public opinion polls. Correa did, and deemed it too high.

The logistics of reversal impose difficulties that are not trivial. If the banking system is financially integrated with the rest of the world, the longer it takes a government to introduce a new currency, the lower the probability that dedollarization 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 dedollarize.

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 financing (as Correa did in Ecuador), and (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 experiences of Panama, Greece, Ecuador, and El Salvador show 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 (see table 6.4). It also confirms that the survival of a nonindependent central bank after dollarization facilitates dedollarization. The available data seems to support this hypothesis. Given the traumatic experiences of Argentina (2002) and Zimbabwe (2019), any politician would

TABLE 6.4. Dollarization and institutional quality indices.

Country	Index of electoral democracy (IED) (2000–21)	Index of judicial constraints (2000–21)	Index of central bank independence (2000–21)	Index of financial openness (2000–20)	Dollarization 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

Note: The IED is scaled from 1 to 100.

Source: Author, based on data from V-Dem Institute, Garriga (2016), and Ito and Chinn (2023).

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. Further research is needed to confirm both hypotheses.

In a relatively well-functioning electoral democracy, any politician intent on forcibly replacing the dollar with a domestic currency would face several obstacles. First is the opposition of a majority of the electorate.[15] Second are the serious logistical complications of introducing a new currency and generating demand for it. Third is a significant and negative economic impact on economic activity.[16]

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 would be.

Years before the demise of Convertibility, Zarazaga (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" (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 (2015–19) 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.[17] It is worth comparing this regime with Convertibility to try to understand why it lasted much longer.

Argentina ended the nineteenth century as one of the world's worst abusers of inflationary finance. In the first eight decades of Argentine monetary history, which 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 these periods, a depreciating and volatile peso was "almost part of the normal life" (Martinez and Lewandowski 1911, 334). By 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" (Lawson 1899).

After the 1890 crisis, which brought down the venerable House of Baring, all hope of monetary stability in Argentina was lost. To many foreign observers, the Argentine government's manifest inability to manage responsibly its fiscal and monetary affairs threatened to derail the country's extraordinary economic expansion driven by commodity 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 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, 344–45).[18]

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, 1). Juan B. Justo, a leading socialist 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" (1921, 30, 36–37).

Despite this dismal track record, at the end of 1899, Argentina's Congress approved a monetary reform that fixed the parity of the peso to gold and established full convertibility. The announcement was met by skepticism in London. An article in the *Bankers' Magazine* by W. H. Lawson—an influential journalist who for years had closely followed Argentine financial affairs—described Argentina's new regime as a "clumsy" copy of India's convertibility scheme and the zenith of "a long line of quack remedies." He confidently predicted its inevitable demise (Lawson 1899).

Despite this dire warning and an initial lack of 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) 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" (120). In other words, an ECD under Argentine jurisdiction was found and institutional anomie was neutralized (for a while). Between 1899 and 1914 the economy experienced extraordinary growth and Argentina's 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 World War I started. In other words, it was a "fair weather" regime. Second, exporters and the land oligarchy controlled the political system, and it was in their interest to keep the system afloat. In Ford's view, in a primary export economy with a large foreign debt burden such as Argentina, 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" (33).[19] 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 nor the emergence of a new power structure in 1916 significantly altered Argentina's monetary dynamics. As pointed out by

Della Paolera and Taylor (2001), between 1914 and 1927 there was "strict adherence to the [monetary] rule [implied by the gold standard]" (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 twentieth 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, 272).

In 1927, Argentina returned to the gold standard, only to abandon it forever at the end of 1929. However, two years passed before there was an unbacked expansion of the money supply (Salama 2000). According to Della Paolera and Taylor (2001), in 1930 almost 80% of the monetary base was backed with gold, a ratio significantly higher "than in any other gold standard country" (192). And even during the worst years of the Great Depression, Argentina maintained a "basic orthodox fiscal stance" (193). The first clear sign of a regime change took place in April 1931, when the Caja de Conversión (conversion office) started rediscounting commercial paper (188). The creation of the Argentine central bank in April 1935 was also a milestone in the country's return to monetary and fiscal indiscipline. Be that 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, the League of Nations praised its prudent countercyclical management of monetary policy before the onset of World War II (League of Nations 1944, 84–85).

As mentioned in a previous section, the June 1943 military coup led by Juan Perón was a major turning point in Argentine history. Under Perón's leadership, in a short period of time the country rose to the high position in the global inflation rankings that it still holds today. During the Perón regime (1946–55) the central bank became an agency of the executive, and the inflationary tax became a recurrent source of deficit financing.[20] Since then, the only lasting period of price stability occurred between March 1991 and December 2001 (see Ocampo 2017 and 2021a).

Why Did Convertibility Fail?

The main reason the gold standard worked in Argentina 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. However, after the democratically elected Perón dismissed the Supreme Court in 1947, institutional anomie became a chronic feature of Argentine life (for the impact of this decision on institutional quality, see Alston and Gallo 2010).

When Convertibility was launched on April 1, 1991, the public believed that a law approved by Congress prohibiting the central bank from financing the government was a sufficient guarantee. This belief was shared by most economists, who considered the new currency regime one of the strongest commitments ever made in Latin America (Cukierman, Kiguel, and Liviatan 1994). The traumatic end of Convertibility proved them wrong. It is important to distinguish the factors that triggered a crisis in Argentina in 2000 from those that led to the reversal of Convertibility two years

later. They are related but conceptually different. A crisis can trigger demands for regime reversal, but whether those demands are met depends on political and institutional factors.

When explaining the end of Convertibility, most economists have highlighted growing fiscal imbalances at the provincial level, deteriorating fiscal sustainability at the national level, strong appreciation of the real exchange rate, currency mismatches in the banking sector, vanishing credibility, impact of foreign shocks, and so forth (see Fanelli 2002; Hausmann and Velasco 2002; Mussa 2002; Powell 2002; Calvo, Izquierdo, and Talvi 2003; Damill, Frenkel, and Juvenal 2003; De la Torre, Levy Yeyati, and Schmukler 2003; Della Paolera and Taylor 2003; Galiani, Heymann, and Tommasi 2003; López Murphy, Artana, and Navajas 2003; 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 it did not behave as a "true currency board" (for example, the Argentine central bank sterilized capital inflows). 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, 56). Although this is true, the heterodox features of Convertibility cannot explain why it was reversed in such a traumatic way.

Few studies highlighted 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) 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 and raised doubts about external convertibility. Several weaknesses in Argentina's institutional fabric magnified the impact of these political shocks and made it politically viable to repeal the Convertibility Law. First, the decision was made by a president who had publicly opposed the currency regime but had not been elected by a majority of voters. Second, the design of the electoral system weakened the link between voters and legislators. Third, AIA prevailed. The central bank, although de jure independent, after April 2001 became, de facto, an appendix of the executive.

This paper argues that institutional anomie is a key factor that explains the reversal 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 electoral system (particularly the so-called *lista sábana* or closed party list ballot) ensures that legislators are beholden not to voters but to the governing party's bureaucracy. Although the 1994 constitutional reform limited the ability of the executive to appoint or remove Supreme Court justices, it was packed before its enactment. Under President Menem, the appointment of judges, particularly at the federal level, was driven mostly by politics. 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. At the time, doubts started to emerge about the plan's long-term viability, which proved prescient in 2001 (Zarazaga 1995a, 9). A succession of foreign-exchange crises in Southeast Asia (1997), Russia (1998), and Brazil (1999) put a dent on capital flows to emerging markets, limiting Argentina's growth prospects and its ability to finance growing fiscal imbalances. With a looming change of government, the sustainability of the currency regime was put into question. 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, who had the support of powerful industrial groups and union leaders. Former president Raúl Alfonsín, an influential opposition leader, also shared this view.

Aware of the problem, in early 1999 President Menem announced dollarization and encouraged his ministers to accelerate its implementation by paying salaries to public employees in dollars (Rosales and Obarrio 1999). But the political dynamics generated by a looming election worked against his 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 in part because he publicly supported Convertibility in contrast to Duhalde, who openly criticized the currency regime and hinted at a possible sovereign default.[21] More problematic were the deep divisions within the governing party about the currency regime. In an interview he gave in October 2000, Alfonsín declared that the 1930 military coup and Convertibility were "the two gravest" episodes in Argentine history and described the latter as "a deadly trap" (*La Nación* 2001). Alfonsín's diatribes against the currency regime echoed the complaints of several industrial groups that since 1999 had been lobbying for a devaluation. On this issue, Alfonsín was much closer to Duhalde than to De la Rúa, since he could not conceive of politics without soft money. Consequently, until the last days of De la Rúa's presidency, "the most relentless critic of the government's economic policy was the ruling coalition itself" (Corrales 2002, 35). One cannot underestimate the Alfonsín factor in any explanation of the demise of Convertibility. When Rudiger 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 Carlos Álvarez. The ensuing political crisis highlighted the deep fissure within the Alianza

and triggered a bank run that, after undergoing varying degrees of intensity, did not stop until December 2001. Ironically and tragically, the reappointment of Domingo Cavallo as economy minister in March 2001 contributed to an undermining of the credibility of the regime. After 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; Powell and Sturzenegger 2002).[22] Not surprisingly, Cavallo's appointment fueled expectations that such a scenario could materialize, which led to a higher devaluation premium and a rise of peso interest rates.

One of Cavallo's first measures was to fire the president of the central bank. This decision not only made "a mockery of central bank independence" but also further eroded the "already shaky reputation of institutions in Argentina" (Powell 2002). At the end of April 2001, 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 to change the parity of the peso to an average of the dollar and the euro.[23] He also announced an export subsidy that implied an effective devaluation. It was evident after these measures that Convertibility was not an ironclad currency regime. To make matters worse, a debt restructuring increased the banking system's exposure to the government at a time when investors entertained increasing doubts about its solvency.[24] By mid-July 2001, the devaluation risk premium had reached its highest level ever.[25] A sound defeat of the Alianza in the October legislative elections sealed the fate of De la Rúa's presidency and Convertibility.

The events of December 2001 and January 2002 confirmed that in Argentina, the decisions of a president backed by the Peronist Party, however arbitrary, would prevail over any formal or informal constraints.[26] A glaring example of the high degree of institutional anomie that prevailed at this time was the fate of the so-called

Intangibility of Deposits Law, approved in literally three minutes by a majority of the Argentine Senate in August 2001. This law was meant to increase depositors' confidence in the banking system by protecting their assets against any attempt by the government to confiscate them or change their contractual nature. It was hoped that the law would halt the steady deposit withdrawals that had started in October 2000. The new law only served to fool depositors for a short while. On January 7, 2002, the Argentine government froze all deposits and forcibly converted all US dollar deposits into pesos at a below-market rate, imposing a 30% capital loss on their holders.[27] The Supreme Court later ruled that this measure was unconstitutional, but very few depositors benefited from this ruling (see Marval O'Farrell Mairal 2004 and Clarín 2017).[28]

The only barrier to reversing Convertibility had been its high 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 a stronger allegiance to the party cadres than to voters. Second, the unfortunate and unnecessary resignation of De la Rúa created a major political crisis that elevated Duhalde to the presidency. Ironically, Duhalde had lost the 1999 election in part due to his opposition to Convertibility. Thanks to a palace coup he orchestrated with the help of Alfonsín, he managed to do what a majority of the electorate opposed.

It is evident from this chain of events that without radical changes in the institutional and electoral framework, a currency board regime with a bimonetary banking system will remain a suboptimal commitment device for Argentina. Convertibility is different from dollarization in an important respect that made it particularly vulnerable to reversal: the bimonetary nature of the banking system. When, thanks to Alfonsín and Duhalde, fears of devaluation resurfaced, financial dollarization increased. At the beginning of Convertibility, US dollar–denominated M3 was 33% of the total, but by November 2001 the percentage had doubled.

As Della Paolera and Taylor (1997, 2001, and 2003) have pointed out, there is a potentially lethal inconsistency between any fixed exchange rate regime and a fractional reserve banking system with (a) a high ratio of inside money to outside money, and (b) a large currency mismatch. External convertibility becomes unsustainable when the deteriorating quality of bank assets puts internal convertibility in doubt. In turn, internal convertibility becomes unsustainable when fears of devaluation increase the currency mismatch in banks' balance sheets. Such inconsistencies would be eliminated under dollarization because external convertibility would disappear. However, even under dollarization, a banking system prone to originating bad-quality assets (aka *gaucho banking*) will always pose a threat to financial stability.[29]

The probability of reversal of a currency board regime with a bimonetary system can increase rapidly when an external shock and/or internal political opposition creates uncertainty. Lower credibility inevitably leads to (a) higher financial dollarization, and (b) a growing devaluation premium. The former increases currency mismatches in banks' balance sheets, and the latter leads to higher interest rates that hurt private companies and deteriorate loan quality. This combination can put the soundness of the banking system into question and trigger a bank run, creating a dangerous feedback loop. Also, as dollar deposits grow, so does the political temptation to confiscate them, particularly if they are concentrated in a relatively small number of individual holders who are electorally irrelevant.

The magnitude of the political cost of reversing Convertibility was directly proportional to how many voters held US dollar bank deposits, which in December 2001 amounted to US$42.3 billion. According to official figures, individual holders (i.e., excluding legal entities), who accounted for 50% of this amount, were broken down as follows: 67,441 checking accounts, 3.5 million savings accounts, and 1.1 million time deposit accounts.[30] These deposits were highly concentrated: only 14,320 checking accounts, 549,800 savings

accounts, and 903,376 time deposits had a balance in excess of US$3,000. These depositors bore the brunt of the government's decision to repeal the Convertibility Law in January 2002. The amount effectively confiscated by the government can be estimated at US$13 billion. From an electoral standpoint, these depositors represented only 18% of registered voters.[31] Given that Peronist Party voters were underrepresented among them, the political cost of reversing Convertibility was not high for Duhalde.

The reversal of the Convertibility Law in January 2002 suggests that strong voter support for a currency board regime will not be an effective deterrent against reversal if (a) institutional anomie prevails, (b) there is a bimonetary banking system, (c) financial dollarization is high, and (d) dollar deposits are held by a relatively small percentage of voters.

It is also important to point out that, in this instance, the electoral system did not serve as a restraining mechanism because Duhalde was not elected but was installed in the presidency thanks to a palace coup.[32] The other deterrent to reversing Convertibility was its expected economic cost. At the end of 2000, Dornbusch (2001) had warned that a devaluation would accomplish little and would destroy the banking system. This prescient warning was ignored. 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 on January 6, 2002, Duhalde's economy minister Jorge Remes Lenicov stated that the planned devaluation of the peso would have "a reactivating effect" on the economy, as had happened in 1967 (*La Nación* 2002; Edwards 2002). Two months later, government officials reaffirmed "their confidence" that the GDP contraction would "not be greater than 4.9 percent" (Oviedo 2002). A month later, Remes Lenicov resigned. His projections turned out to be widely off the mark: in 2002 GDP fell by a stag-

gering 11% while the poverty rate jumped to 50%, setting a historical record.[33] Several factors may have contributed to this error. First, the Brazilian devaluation, viewed by many as the example Argentina had to emulate, was followed by a relatively rapid economic recovery.[34] Second, during 2001, several foreign "experts" had argued that a devaluation of the peso and an orderly sovereign default would have a stimulating effect on an economy that had stagnated for almost two years (see Zarazaga 2003). Be that as it may, Argentine politicians were able to blame the Convertibility regime for the 2002 megarecession when the true cause was the disorderly way in which they decided to scrap it.[35]

An important lesson from Convertibility is that in countries that suffer from acute institutional anomie with a political system that has incentives to spend excessively and procyclically, any fixed exchange rate regime with a bimonetary banking system will be inherently unstable and likely to be reversed. The bifurcation of the economy and the banking system into two currencies reduces the electoral base that supports the hard peg, while simultaneously contributing to the emergence of a confiscating coalition.

Why did the 1899 regime last longer than Convertibility? Different degrees of institutional anomie. Although the quality of electoral democracy was lower in the 1900–1929 period, judicial constraints on the executive branch and compliance with the Supreme Court and judicial decisions were stronger (i.e., institutional anomie was weaker). Also, from 1900 until 1929 the banking system was not bimonetary, that is, assets and liabilities were only denominated in gold-backed pesos. See table 6.5.

Can Dollarization Work Where Everything Else Has Failed?

The events of January 2002 confirmed that a currency board regime with a bimonetary banking system is not an ECD, at least

TABLE 6.5. Caja de Conversión (1900–1929) versus Convertibility (1991–2001).

	1900–1929	1991–2001
V-Dem Indices		
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
Aráoz		
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

Source: Aráoz (2013) and V-Dem Institute.

in Argentina. The key question is whether this conclusion also applies to dollarization. Economists generally lump them together, but as Powell (2021) pointed out, the "experience of the currency board is only partially informative regarding the possible success of dollarizing." The experience of Ecuador and El Salvador suggests it is "much more difficult" to reverse official dollarization than a currency board. Among other things, dedollarization requires creating demand for a new currency, a problem that proved insoluble to both Correa and Bukele. Most importantly, it requires taking dollars out of people's pockets, which entails a high political cost.

Given that Argentine policymakers have proved incapable of using fiscal and monetary policy effectively, it makes sense to look for an alternative regime. Argentine history shows that any policy rule would be better than arbitrary and suboptimal discretion. It also shows that de facto central bank independence is a chimera in the presence of acute institutional anomie. Despite these facts, some of the most respected Argentine economists oppose dollarization (see, for example, Nicolini 2021 and 2022, Uribe 2022a and 2022b, and Sturzenegger 2023). Although most recognize that it would eliminate inflation, they considered it a costly policy choice due to its sup-

posed procyclicality and the loss of flexibility and seignorage revenues. As an alternative, and despite overwhelming evidence, they propose monetary restraint under an independent central bank. Since 1943, the only period when Argentina had de facto and de jure central bank independence started in September 1992 and ended in April 2001 with an arbitrary presidential decree. Moreover, during this period, monetary policy was constrained by the Convertibility Law.

With respect to seignorage revenues (Cukierman, Kiguel, and Liviatan 1994), in a scenario of price stability, they generally amount to around 1% of GDP annually.[36] In the case of Argentina, due to de facto dollarization, most of the seignorage revenue (understood as central bank revenue and not inflationary tax) has already been lost. The monetary base represents 2% of GDP. Most arguments against dollarization fall into a "nirvana fallacy." A flexible exchange rate regime with an independent central bank that follows optimal intervention rules is not a realistic policy option. 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. It would also be wrong to conclude that dollarization would be easily "reversible" based solely on the experience of Convertibility. Another effective deterrent would be the negative impact that reversal would have on economic activity. Finally, as Cukierman (1993) noted, the strongest policy commitment is the one with the highest political cost of reversal. The Ecuadorian experience strongly suggests that no other currency regime has a higher political cost of reversal than dollarization.

Conclusions

Over two centuries of Argentine monetary history, high, persistent, and volatile inflation has been the norm. Lasting stability was only achieved 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 coexists with the peso will be inherently unstable and highly vulnerable to reversal, and therefore unlikely to be credible.

The dynamics of the electoral calendar—with midterm 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 precondition 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 has 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 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 economic growth and lower inflation, 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 suboptimal 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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Notes

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1. A detailed discussion of all of these issues can be found in Cukierman, Kiguel, and Liviatan (1994); Liviatan (1993); Hanke and Schuler (1999); Bergsten (1999); Goldfajn and Olivares (2000 and 2001); Velde and Veracierto (2000); Berg and Borensztein (2000); Alesina and Barro (2001); Calvo (2000 and 2001); Calvo and Reinhart (2002); Chang and Velasco (2001); Dornbusch (2001); Eichengreen (2001); Antinolfi and Keister (2001); Grubben, Wynne, and Zarazaga (2001); Guidotti and Powell (2002); Karras (2002); Levy Yeyati and Sturzenegger (2002); Salvatore, Dean, and Willett (2003); Jacome and Lönnberg (2010); Lindenberg and Westermann (2012); and White (2014).
2. Official or de jure dollarization is a government decision imposed by law. Spontaneous or de facto dollarization is voluntary and not legally binding.
3. Since the nationalization of the Panama Canal in 1999, Panama has 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.
4. The modern literature on dollarization has not fully explored the experience of many countries in Central America, which in the first half of the twentieth century had adopted the dollar as legal tender (see Helleiner 2003 and 2005 and Schuler 2005).
5. Lionel Robbins made a similar argument in the foreword to the study of the German hyperinflation by Bresciani-Turroni (1937).
6. 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, 53).
7. Only if price stability is not part of a central bank's mandate could such inconsistency be explained.

8. In their seminal paper on measures of central bank independence, Cukierman, Webb, and Neyapti clarified that "the actual independence of the Argentine central bank is substantially lower than the legal indicators imply" (1992, 363).
9. A *porteño* is a native of Buenos Aires.
10. Schmitt-Grohé and Uribe (2001) calibrated their model for Mexico under the assumption that dollarization was equivalent to a hard peg. However, dollarization entails more than simply a foreign currency regime.
11. A forthcoming paper by Cachanosky, Gibson, and Ocampo (2024) estimates that dollarization reduced the cost of populism in terms of GDP growth rates by almost half.
12. In contrast with Correa, former president Lucio Gutiérrez, who initially opposed dollarization, has become one of its most vocal advocates (see Castiñeiras 2021).
13. Dedollarization doesn't necessarily need to be traumatic if done by a fiscally responsible government at nonconfiscatory 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 decade that followed, the inflation rate did not significantly diverge from that of the United States.
14. Reversal of dollarization means salaries will no longer be paid in dollars.
15. 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 actual decision maker (in fact, taxpayers will end up paying the cost of adverse verdicts).
16. The key issue is the reason behind dedollarization (see footnote 17).
17. Gold convertibility was suspended with the onset of World War I but was reintroduced in 1927 and was finally abandoned after the Wall Street crash of 1929.
18. Caballero and Dornbusch (2002) arrived at a similar conclusion in 2002.
19. As it relates to Argentina, this statement is only valid until 1899. Also, political stability decreased markedly in the years following the monetary reform.

20. Although at the time Perón did not hold any position in government, he had won the presidential election handily and the military regime followed his orders.
21. Formed in 1997, the Alianza was a center-left coalition that was led by the Unión Cívica Radical (UCR), Argentina's oldest political party, and also included FREPASO (Frente País Solidario), formed in the mid-1990s by dissident "progressive" factions of the Peronist Party, and the Socialist Party.
22. At the time, Cavallo's statement had a significant positive impact on the devaluation risk premium (see Schmukler and Servén 2002).
23. If Convertibility had survived, the inclusion of the euro as a reserve would have led to an even stronger appreciation of the peso, which these measures aimed to neutralize.
24. Another unfortunate and unintended consequence of this restructuring was the automatic cancellation of a liquidity facility set up by the central bank with international financial institutions.
25. 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.
26. Non-Peronist presidents do not have such a luxury.
27. The government basically converted dollar bank deposits into pesos ("pesified") at an exchange rate that resulted in a confiscation. As is common in Argentina, the mechanism to repudiate the law was an "emergency law" approved by a majority of Congress.
28. 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.
29. Narrow banking, or any other variant of the 100% reserve system, is not a viable option for Argentina, least of all in the 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, commonly known in any article on economics as a monetary aggregate that comprises physical currency in circulation plus demand deposits, 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.

30. 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.
31. In the 2003 election, Ricardo López Murphy, a right-of-center politician, got slightly over three million votes, which probably included most of the "victims" of the government's confiscation.
32. As Cavallo (2002a) has forcefully argued, what happened in Argentina in December 2001 can be described as a civil and bloodless coup d'état.
33. Argentina's GDP per employed person grew 23% between 2002 and 2005. However, Zarazaga (2006) estimated that it should have grown by about 35% during this period.
34. By mid-2001, the evidence in emerging markets suggested that devaluations were contractionary in the first year and slightly expansionary afterward, with any real effects disappearing rapidly (Kamin 1988). The most immediate precedent was Brazil's devaluation in early 1999, which was followed by a rapid economic recovery (Fraga 2000; Gruben and Welch 2001). There were many obvious reasons why the Brazilian experience could not be extrapolated to Argentina, particularly regarding the high levels of dollarization in the banking system. However, some well-known economists suggested otherwise (Krugman 2001).
35. 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.
36. The caveats raised by Chang and Velasco (2001) when estimating the seignorage losses generated by dollarization are applicable to all these arguments.

7

Getting Global Monetary Policy on Track: The Case of Latin America

Tobías Martínez González and Juan Pablo Nicolini

The purpose of this chapter is to offer a quick review of the inflation and monetary policy experience of several Latin American countries during the most recent decades. The period we review is full of diverse inflationary experiences and policy experiments. It therefore provides a natural laboratory to evaluate inflation—its causes, consequences, and cures. We believe that those experiences shed light on our current predicament with inflation in developed economies.

Specifically, we use these experiences to address the two central topics the conference was centered around: to get monetary policy on track and to explore how to reduce inflation without output losses or slowing down economic growth. On a more general note, we celebrate the global approach adopted for the conference: we too often get the impression that policy debates in the United States fail to profit from relevant worldwide experiences (fortunate or unfortunate). Having been exposed to economic policy debates in other countries, we believe that sin to be relatively common, but more so in the US.

As is well known, several Latin American countries went through hyperinflationary episodes during this period. Some of the countries in the sample had more than one hyperinflation during the period, notably Argentina and Brazil. Table 7.1 reports data on the ones with the highest yearly inflation rates.

The views expressed herein are those of the authors and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.

TABLE 7.1. Hyperinflation in Latin America.

Country	Year	Inflation
Chile	1974	600%
Bolivia	1985	11,700%
Argentina	1989	4,900%
Peru	1990	7,500%
Brazil	1994	2,200%
Venezuela	2018	63,400%

Source: Kehoe and Nicolini (2021).

In order to summarize this history of inflation in a single plot, we need to cap the inflation rate at some value. Otherwise, only the very high values would be visible. Thus, we chose to graph the series

$$\Pi^*_{t,j} = \max\left\{\Pi_{t,j}, 100\right\}$$

for $j = 1, \ldots, 11$ and $t = 1960, \ldots, 2023$. The result is depicted in figure 7.1, where we also include the annual inflation rate for the United States, represented by the solid black line.

There are four discernible stages in the figure. The first coincides with the Bretton Woods period and is characterized by inflation rates predominantly below 30%. We label that period "Managing 'Moderate' and Chronic Inflation." After the end of the Bretton Woods period, inflation rates rise considerably, with many instances in which it surpasses the bound. We label this as the "Inflation without Control" period. By the mid-1990s, the efforts to control fiscal deficits and curb very high inflation pay off, and by the early 2000s, for the first time in all the periods analyzed, the inflation rate is below 20% in all countries. We label this as the "Taming Inflation" period. Finally, starting around 2004, we observe a clear convergence of inflation to levels very similar to those observed in the United States for all countries, barring two notable exceptions: in both Argentina and Venezuela, fiscal deficits went again beyond control, and the

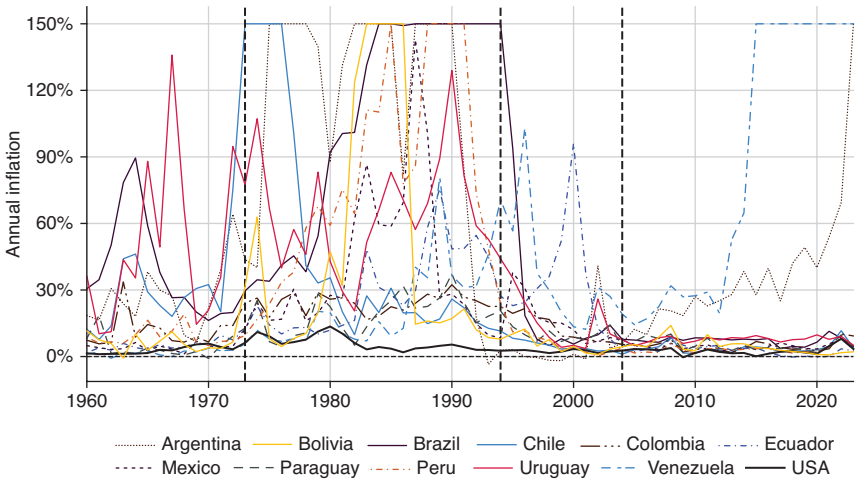

FIGURE 7.1. Annual inflation in the United States and Latin American countries, 1960–2023.

Source: Kehoe and Nicolini (2021), World Bank, and World Bank via FRED.

age of high inflation came back with fury. We label this as the "A Lesson Learned" period. In doing so, we are obviously excluding the two failed students, Argentina and Venezuela.

An alternative view is presented in figure 7.2, which depicts the frequency distribution of annual inflation rates across these stages. The first bin includes all inflation rates below 5%. We consider this range to be well within the targets of the central banks of the region, and with values consistent with the ones observed in developed economies. The second bin considers one-digit inflation rates but above 5%. These values are within the range of possibilities following large shocks, like the large primary commodity shocks these countries were exposed to. The third bin includes moderately high inflation rates, ranging from 10% to 40%, and the last two bins consider high and very high inflation rates, respectively. We excluded from this figure the cases of Argentina and Venezuela.

In order to address the degree to which monetary policy may have gotten off track in recent years, we now focus in further detail

FIGURE 7.2. Frequency distribution of annual inflation in Latin America, 1960–2019.

Source: Kehoe and Nicolini (2021), World Bank, and World Bank via FRED.

on the period after 2004. We consider only the nine countries that "learned the lesson" and compare their experiences with that of the US.

There is some heterogeneity in the inflation targets for these countries. The highest target is 4.5% (Uruguay) and the lowest is 2% (Peru), like the one in the US. Two of the countries (Ecuador and Bolivia) do not have explicit inflation targets. A measure of success in monetary policy is not the level of inflation, but the difference between inflation and the target of the central bank. Thus, in figure 7.3 we plot the deviation of inflation from the tar-

FIGURE 7.2. *continued*

get (IT), that is, $\text{dev}_t = \Pi_{t,j} - \Pi^{\text{tar}}_{t,j}$, for the nine countries and the United States from 2004 onward. To consider all the countries, we assumed for Bolivia and Ecuador a target of 2%, which is the smallest target in the sample.

The United States is among the countries with the lowest value for most of the sample, but overall, it behaves like the rest of the countries. We can see this argument more clearly in figure 7.4. There, we plot the average deviation of inflation from the inflation target for these nine countries along with an upper and lower limit equal to one standard deviation. The solid black line represents the deviation of inflation from the inflation target for the United States. Throughout almost the entire period, the deviation for the

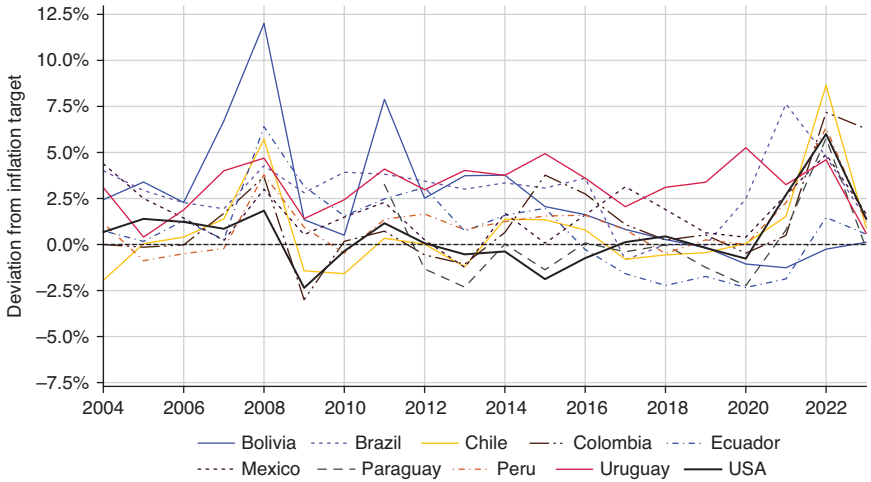

FIGURE 7.3. Deviation of inflation from the inflation target in Latin America (excluding Argentina and Venezuela) and the United States.

Source: Kehoe and Nicolini (2021), World Bank, World Bank via FRED, Banco Central de Uruguay, Banco Central del Paraguay, Banco Central do Brasil, Banco Central de Chile, Banco Central de la República, Banco Central de Reserva del Perú, Banco de México, and CentralBanksNews.info.

United States falls within the interval of the average deviation for Latin America.

It is worth noticing that the lower limit of the average deviation for Latin America usually oscillates around zero except for two periods: 2008 and 2022. It is also interesting to note that the upper limit, the average, and the lower limit for Latin America are practically identical in those two episodes. These were years where commodity prices were very high. Many of the countries in our analysis are commodities producers and exporters, and commodity production constitutes a high percentage of their GDP. Thus, commodity price shocks are very large, and they have large effects in these economies. The clearest example is Chile, a major copper producer. Copper prices were very high in 2008 and 2022, and if we refer back to figure 7.3, we can see that the highest value is indeed Chile in mid-2022. The 2021 inflation shock in Chile came

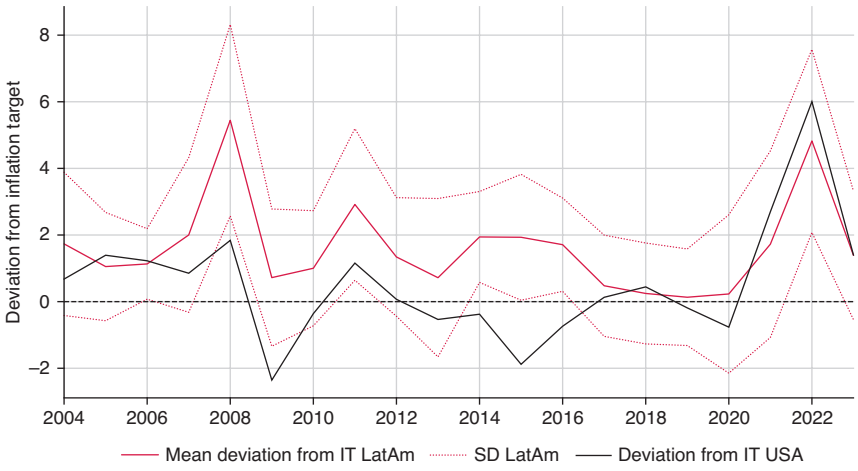

FIGURE 7.4. Mean deviation from inflation target (IT) in Latin America and the United States.

Source: Kehoe and Nicolini (2021), World Bank, World Bank via FRED, Banco Central de Uruguay, Banco Central del Paraguay, Banco Central do Brasil, Banco Central de Chile, Banco Central de la República, Banco Central de Reserva del Perú, Banco de México, and CentralBanksNews.info.

with large increases in copper prices. And the deviation of inflation from target was very similar in 2021 to what it was in 2008. These experiences suggest that even well-functioning and credible central banks—as many central banks in Latin America are, in particular the Central Bank of Chile—may not be able to keep inflation at the target when their economies are subject to massive real shocks. The 2008 commodity price shock was not very important for the US, but it was important for Chile. The COVID-19 shock was clearly important for both.

The question we are interested in addressing now is whether monetary policy in Latin America effectively got off track during the COVID crisis. In figure 7.5, the monthly inflation for the nine countries of interest is shown, together with the one for the United States. As before, we exclude Argentina and Venezuela from this part of the analysis since their monetary policies got off track long, long ago.

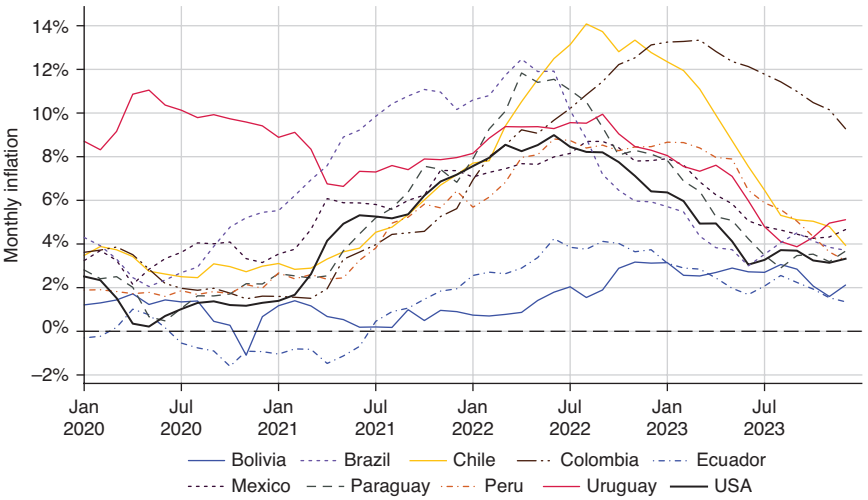

FIGURE 7.5. Monthly inflation in Latin America (excluding Argentina and Venezuela) and the United States, 2020–2023.

Source: Instituto Nacional de Estadística, Banco Central del Paraguay, Fundação Getulio Vargas, Instituto Nacional de Estadísticas, Departamento Administrativo Nacional de Estadística, Instituto Nacional de Estadísticas y Censos, Banco Central de Reserva del Perú, Instituto Nacional de Estadística y Geografía, Instituto Nacional de Estadística, and US Bureau of Labor Statistics via FRED.

Although a marked increase in monthly inflation can be seen during the COVID-19 pandemic period, this graph is strong evidence that in these countries inflation was "conquered" and that it behaved very similarly to how it behaved in the United States. In addition, as becomes clear from figure 7.5, the post-COVID experience is not different from the one in 2008.

To evaluate the behavior of monetary policy, we now show the difference between the monthly inflation rate and the monetary policy rate, $\Pi_{t,j} - i_{t,j}^{\text{policy}}$. The reason to do so is that the policy framework in most of these countries (including in the US) prescribes strong increases in the policy rate as the effective way to contain inflation in the short run. One way to simplify the policy reaction function of the central banks is through a linear relationship between the policy rate and current inflation, the so-called Taylor rule. If the coefficient

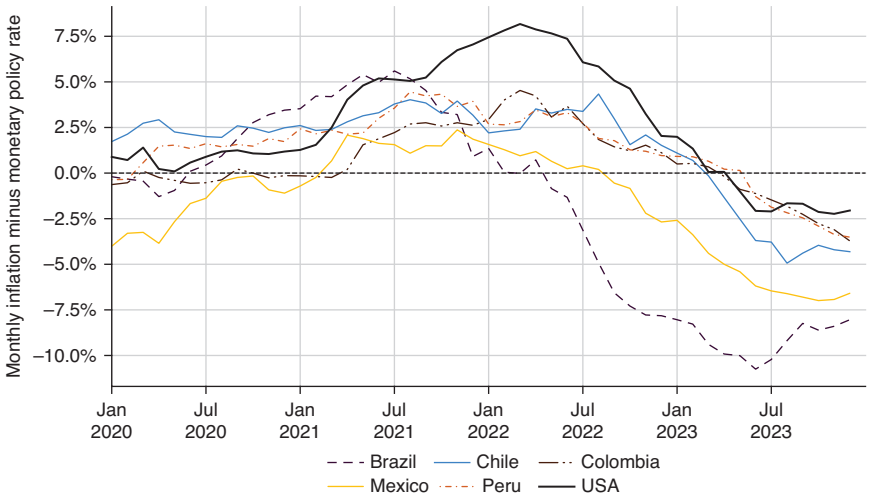

FIGURE 7.6. Inflation rate minus monetary policy rate in Latin America and the United States.

Source: Instituto Nacional de Estadística, Banco Central del Paraguay, Fundação Getulio Vargas, Instituto Nacional de Estadísticas, Departamento Administrativo Nacional de Estadística, Instituto Nacional de Estadísticas y Censos, Banco Central de Reserva del Perú, Instituto Nacional de Estadística y Geografía, Instituto Nacional de Estadística, US Bureau of Labor Statistics via FRED, and BIS Data Portal.

on inflation in the Taylor rule is equal to 1, we should observe no movement; if it is greater than 1, it should move downward.

The analysis that follows focuses exclusively on the countries that explicitly use the short-term interest rate as the policy instrument. The results are depicted in figure 7.6. In the case of all Latin American countries, the curve is slightly increasing at the beginning, picking up by July 2021, barely a quarter after inflation rates start to increase. They then start decreasing and become lower than their initial values within a year or so. They all begin to descend before it does for the United States, indicating that those countries started tightening monetary policy earlier. This allows us to conclude that while monetary policy in Latin America never got off track, in the United States it did, at least for a while. Today we can say that we are all back on track.

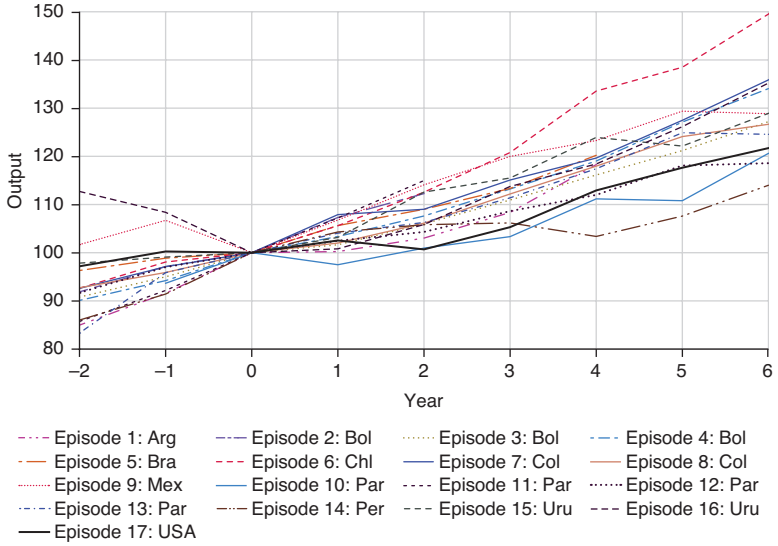

FIGURE 7.7. Output during inflation-stabilization episodes in Latin America and the United States.
Source: Penn World Table.

To conclude, we endeavor to explore the feasibility of reducing inflation without incurring real output losses or dampening economic growth. Our approach involves identifying various episodes across the eleven Latin American countries considered, characterized by what we term "inflation stabilization." This designation applies to periods where annual inflation peaked between 13% and 150%. The lower bound, set at 13%, corresponds notably to the peak inflation experienced by the US during the "Volcker stabilization" of 1982. By comparing these Latin American episodes with the aforementioned US stabilization episode, we aim to shed light on the belief stemming from the US experience that stabilizing inflation necessarily entails enduring a recession.

The upper limit of 150% excludes hyperinflation episodes from our analysis, as these extreme cases may obscure the true costs associated with inflation-stabilization efforts. Notably, we anchor

the year of peak inflation as year zero, setting the output of that year to one hundred to facilitate meaningful comparisons across episodes. We then analyze output dynamics from two years prior to peak inflation (year −2) to six years after (year +6).

In figure 7.7, we present the depicted episode corresponding to the US alongside sixteen other episodes from Latin American countries. Upon scrutiny, we observe four episodes where output is lower than that observed in the US one year after the peak of inflation. However, a deeper examination reveals that two years poststabilization, the US exhibits the lowest output among all considered episodes. This finding suggests that the recession following the Volcker stabilization may represent more of an exception than a rule. Alternatively, based on evidence from Latin America, instances abound where inflation was stabilized without incurring output losses.

In conclusion, our study reveals two primary insights. First, for the majority of Latin American countries that "learned the lesson" (nine out of eleven), monetary policy, unlike the temporary departure observed in the US, likely remained on track throughout. Second, numerous episodes demonstrate that inflation reduction can be achieved without significant real costs or output losses. These findings, gleaned from Latin America's rich empirical landscape, offer valuable insights into the nuanced approach to monetary policy going forward.

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8

China's Monetary Policy: Where Are We Now?

Zhiguo He and Wei Wei

China's monetary policy, overseen by the People's Bank of China (PBC, China's central bank), differs significantly from US practices in several ways. First, unlike the highly independent Federal Reserve System, the PBC is not a legally independent central bank, resulting in a monetary policy with multiple objectives aimed at achieving national economic goals. Second, although the PBC has been increasing the use of price-based policy instruments, it still predominantly relies on quantity-based tools. Third, in recent years, the PBC has been increasingly tasked with facilitating structural changes in the economy using monetary policy tools.

The PBC does not function as a legally independent central bank. Instead, it is one of the twenty-six ministerial-level departments under the State Council. According to the PBC Law, the PBC formulates and implements monetary policy under the guidance of the State Council. Consequently, China's monetary policy encompasses multiple objectives, including maintaining price and currency stability, boosting economic growth, promoting employment, broadly maintaining balance of payments, and, in recent years, facilitating structural changes and improving social welfare (Wang 2019). The decision-making process requires approval from the State Council to adjust significant policy instruments, such as the benchmark deposit and lending rates and the reserve requirement ratio (RRR). However, the PBC enjoys a certain degree of operational autonomy regarding other policy tools.

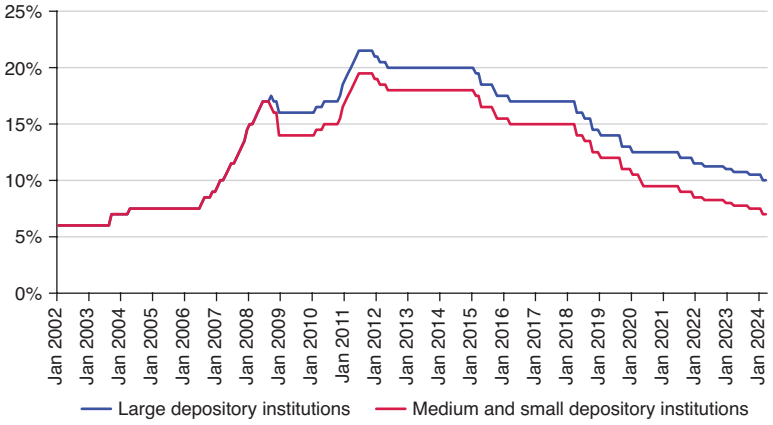

FIGURE 8.1. Reserve requirement ratio (RRR).
Source: Wind Financial Terminal.

For the US monetary authority, the intermediate target of monetary policy is the federal funds rate, whereas for China, the intermediate target has been the growth of the monetary aggregate (M2) (Chen, Ren, and Zha 2018). The RRR is an important instrument in China to manage liquidity and control the money supply. From 2006 to 2011, the RRR was used as a liquidity-management tool to sterilize the persistently large foreign exchange (FX) inflows. Afterward, it was gradually lowered to release liquidity in response to declining FX reserves (figure 8.1).

Open market operations (OMO) are important and frequently used instruments in China due to the operational autonomy granted to the PBC. The PBC conducts OMO by trading with primary dealers, which currently include forty-eight policy/commercial banks, two security companies, and one state-backed entity (China Bond Insurance Co., Ltd.). OMO mainly includes repurchase agreements (repos), central bank bills, and outright bond transactions. In China, the terminology for repos differs from that in the US, with China's reverse repo being equivalent to the US repo in monetary policy, as China defines the terms from the

central bank's perspective. The PBC conducts repos to withdraw liquidity by selling securities to primary dealers with an agreement to buy them back later, while reverse repos involve buying securities from primary dealers to inject liquidity into the market. Central bank bills were previously used as a sterilization instrument to manage the funds outstanding for FX. In recent years, the PBC has not actively used central bank bills in the domestic market. Instead, the use of central bank bills has shifted to the offshore renminbi (RMB) market (Bahaj and Reis 2024). Historically, the PBC has rarely used outright bond transactions as a monetary policy tool, but it has recently hinted at the possibility of adding treasury transactions to its policy toolkit.[1]

Over the past decade, the PBC has introduced a range of liquidity facilities to increase its domestic asset holdings on the balance sheet, in response to a slowdown or reversal in net FX asset flows. Notable among these tools are the Standing Lending Facility (SLF), Pledged Supplementary Lending (PSL), and Medium-term Lending Facility (MLF) (table 8.1). The SLF provides short-term liquidity to commercial banks, typically overnight, to address temporary funding needs. The MLF offers medium-term lending, usually with maturities ranging from three months to one year, to ensure reasonable liquidity levels in the financial system. The PSL, which has longer maturity terms, typically exceeding three years, facilitates lending to particular sectors or regions. While the SLF and MLF are comprehensive liquidity tools, the PSL is a structural tool aimed at supporting specific sectors or regions. The PSL offers collateralized lending facilities to banks, with eligibility currently limited to three policy banks.[2] So far, the PSL has been used mainly to fund policy banks' special loans for shantytown renovation projects. Similarly, the PBC introduced the Targeted Medium-term Lending Facility (TMLF), another structural tool that provides cheaper funding to banks for lending to small and micro enterprises.

TABLE 8.1. China's liquidity facility instruments.

	Introducing year	Usage of funding	Banks	Collateral required	Tenor	Balance, by March 2024
Standing Lending Facility (SLF)	Early 2013	—	Policy banks and national commercial banks	High-quality bonds and credit assets	1 day–1 month	3.42 billion
Pledged Supplementary Lending (PSL)	April 2014	Specific policy targets/ programs such as the shantytown renovation	Policy banks	Adjustable by the PBC	Normally > 3 years	3,370 billion
Medium-term Lending Facility (MLF)	September 2014	—	Qualified commercial banks and policy banks	High-quality bonds	3–12 months	7,198 billion
Targeted Medium-term Lending Facility (TMLF)	December 2018	Private sector and SMEs	Qualified commercial banks and policy banks	High-quality bonds	3 years	0

Source: PBC and Wind Financial Terminal.

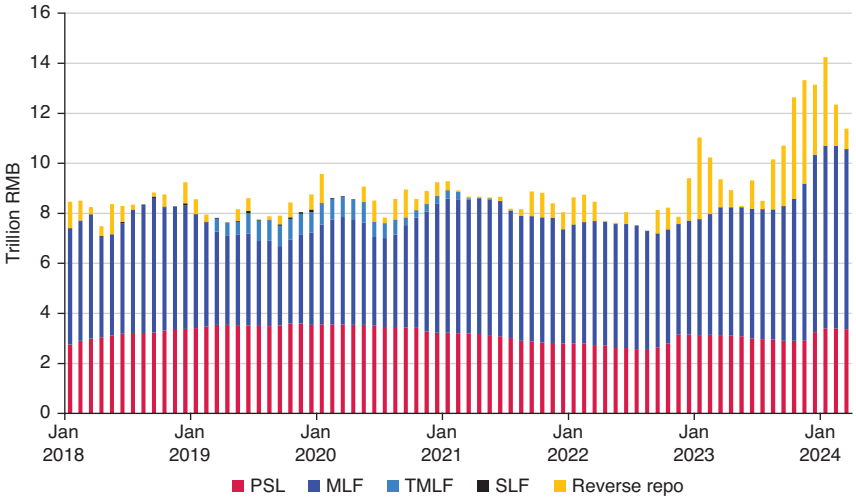

FIGURE 8.2. Outstanding amounts of liquidity facilities and reverse repos.
Source: Wind Financial Terminal.

Figure 8.2 depicts the outstanding amounts of various liquidity instruments over the period from 2018 to 2024. It shows that the reverse repo and MLF have been the PBC's primary tools for managing overall liquidity levels in China's financial system, especially since 2023. In contrast, the balance of the PSL has remained relatively stable, while the size of the SLF is comparatively small. Additionally, the TMLF was only temporarily employed as a targeted lending facility from 2019 to 2021.

Although China has traditionally relied on quantity-based instruments, interest rates are playing an increasingly significant role. The country's interest rate liberalization reform, initiated in the 1990s and progressively advanced, has aimed to transition from a centrally controlled system to a market-oriented one. Key milestones of this reform include the liberalization of lending rates in 2013 and deposit rates in 2015, as well as the establishment of the Loan Prime Rate (LPR) as the benchmark for the credit market

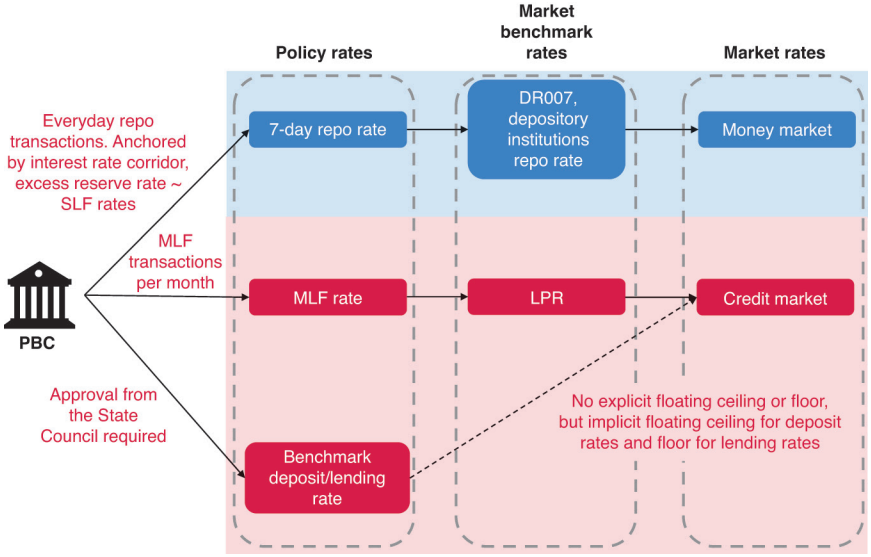

FIGURE 8.3. Transmission of monetary policy.

in 2019. From then on, the PBC has been influencing market rates in the base money supply adjustments.

Figure 8.3 illustrates the transmission mechanism of monetary policy in China. In the money market, the PBC uses the interbank seven-day repo rate as a reference rate, anchoring it as a quasi–policy rate through an interest rate corridor. This corridor uses the remuneration on banks' excess reserves as the lower bound and the SLF rates as the upper bound. In the credit market, the PBC influences the LPR, the benchmark rate, through the MLF rate. Although there is no explicit floating ceiling or floor for lending and deposit rates, the PBC still publishes official benchmark deposit and lending rates as an implicit reference, with adjustments to these official benchmarks requiring approval from the State Council. Currently, the two markets are highly segmented. This segmentation exists because Chinese banks, even those operating as conglomerates, have distinct departments, one handling bond

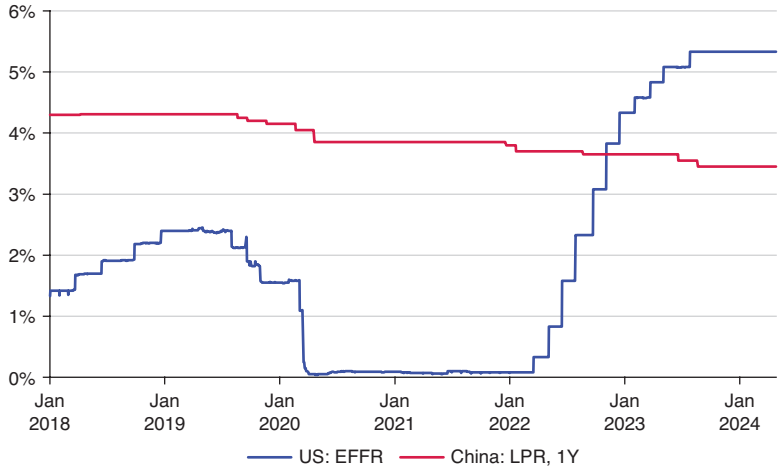

FIGURE 8.4. Benchmark rates.
Source: Wind Financial Terminal.

trading and another focusing on lending. The limited communication and coordination between the two departments results in a dichotomy where one side is market driven and the other remains relatively sluggish in monetary transmission.

Amidst high inflation, the US has sharply increased its benchmark interest rate, as shown by the rising effective federal funds rate (EFFR) in figure 8.4. In contrast, China, grappling with the specter of deflation, has been decreasing the LPR. However, the PBC finds itself constrained in its ability to decrease rates more forcefully due to its critical mandate of maintaining currency stability. The widening divergence between US and Chinese interest rates could exert significant downward pressure on the RMB, a concern that is particularly acute in China's offshore RMB market.

The RMB circulates in two distinct forms: the onshore RMB (CNY) and the offshore RMB (CNH). The CNY is used within mainland China and is subject to capital controls, while the CNH is freely tradable in offshore markets, primarily in Hong Kong. In recent years, the offshore RMB market has developed rapidly.

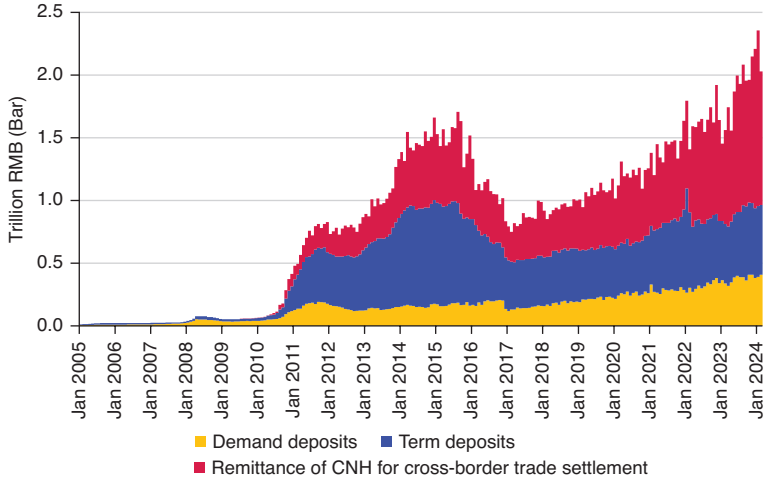

FIGURE 8.5. CNH deposits in Hong Kong.
Source: Wind Financial Terminal.

As depicted in figure 8.5, CNH deposits have grown substantially since 2005. Notably, the CNH is also being increasingly used for cross-border trade settlement, with the remittance of CNH for this purpose climbing sharply to around 1 trillion RMB in 2024, underscoring its expanding role in international trade.

Despite the segmentation of the CNH and CNY markets, Chinese authorities aim to maintain a close peg between the two currencies through coordinated monetary and liquidity policies. The PBC adjusts the CNH money supply by issuing offshore central bank bills, temporarily expanding or decreasing the money supply by redeeming maturing bills or issuing new bills. Concurrently, the Hong Kong Monetary Authority (HKMA) manages liquidity in the offshore CNH market through repurchase agreements and liquidity facilities with selected banks. See Bahaj and Reis (2024) for a detailed description of the CNH monetary framework.

During turbulent times, the PBC could decisively intervene in the CNH interbank market, acting through state-owned banks in the territory, to curb short positions. Figure 8.6 depicts the log

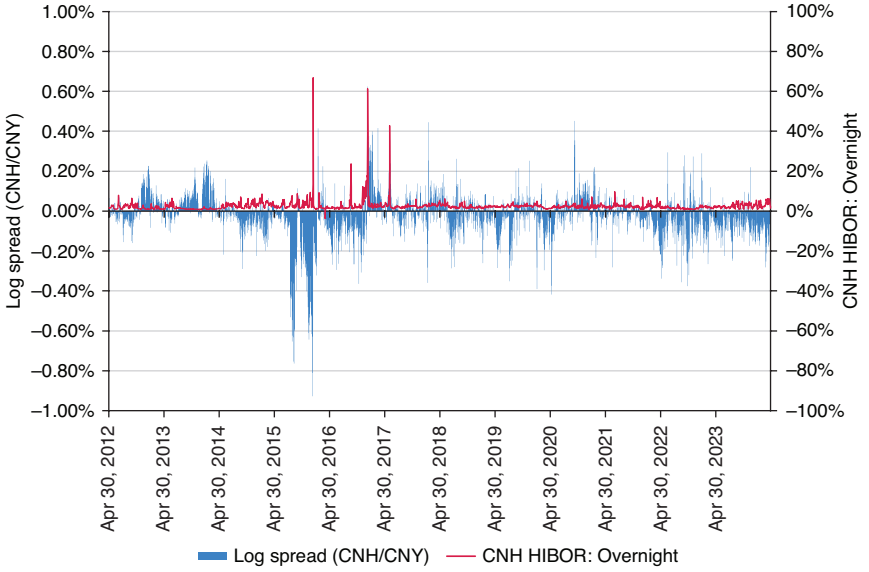

FIGURE 8.6. CNH/CNY spread and borrowing cost.
Source: Wind Financial Terminal.

spread between CNH and CNY and the overnight CNH Hong Kong Interbank Offered Rate (HIBOR), highlighting the possibility and impact of such interventions. Following the 2015 exchange rate reform announced on August 11, 2015, which introduced a more market-oriented mechanism, the CNH faced significant depreciation pressure. Evidence shows that the PBC might intervene by raising CNH borrowing rates (HIBOR) to discourage short CNH positions. In figure 8.6, we observe several unusual spikes in the HIBOR rate, exceeding 20%, indicating a significant tightening of liquidity in this market.

Overall, the PBC (and Beijing) have shown considerable responsiveness to economic challenges over the past decades, with the PBC standing out as one of the most professional teams among China's bureaucratic agencies. While professionals, practitioners, and economists are advocating for more substantial fiscal policies akin to the 2009 four trillion RMB stimulus to address the slowing down of

economic growth, we firmly oppose such measures due to the current limited fiscal capacity. Instead, we believe that monetary responses are more appropriate, as they are more benign and less likely to create a burdensome overhang for the future.

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Notes

1. For more details, see Bloomberg News (2024).
2. China has three major policy banks that play a crucial role in implementing the government's economic policies and driving investment in strategic sectors and regions, including the China Development Bank, the Export-Import Bank of China, and the Agricultural Development Bank of China. For a comprehensive review of China's banking system, see He and Wei (2023).

9

Central Bank Independence in Emerging Economies: Recent Successes and Future Challenges

Ross Levine

The IMF's View on Central Bank Independence, Inflation, and the Pandemic

In response to the COVID-19 pandemic, many emerging-economy central banks reduced interest rates to dampen the adverse effects of the pandemic on their economies. Subsequently, they raised policy rates as inflation accelerated during the worldwide economic recovery. As the International Monetary Fund (2024) documents, most emerging economies kept peak inflation rates below 20% during 2022–23 and reduced them to under 4% by early 2024. However, there were exceptions, such as Turkey, where the central bank lowered its policy rate from mid-2021 through mid-2023 even as inflation soared to over 80% annually. Nonetheless, the predominant experience across emerging economies demonstrated central banks' ability to respond to the pandemic without triggering sustained high inflation rates.

Kristalina Georgieva, the managing director of the International Monetary Fund (IMF), argues that gains in central bank independence over the last decades explain how central banks successfully navigated the COVID-19 pandemic: "Just consider what independent central banks have achieved in recent years. Central bankers steered effectively through the pandemic, unleashing aggressive monetary easing that helped prevent a global financial

meltdown and speed recovery" (Georgieva 2024, 1). Georgieva adds that with "clear mandates" prioritizing price stability and "clear laws protecting their autonomy," central banks were able to deflect short-term political pressures and focus on the long-term interests of the public.

What Is Central Bank Independence and What Makes It Successful?

Georgieva (2024) stresses that three defining features of central bank independence and two auxiliary factors are crucial for effective monetary policy (e.g., Unsal and Papageorgiou 2023; Adrian, Khan, and Menand 2024).

The three defining features of central bank independence are strong governance, accountability, and transparency. Concerning governance, the IMF notes that central banks must have control over their own budgets and personnel so that short-term political motivations are less likely to influence policy choices. Regarding accountability, the IMF stresses that governments should clearly designate and delegate responsibilities to central bank officials and establish clear goals and numerical targets. Such clarity reduces debates and confusion about the central bank's mission and its role relative to other official entities. Clarity about its mission also facilitates assessments of its performance, as there will be less ambiguity about whether the central bank is achieving its objectives. Finally, the IMF highlights the importance of central bank transparency so that people understand central bank decisions and the impact of those decisions on the economy.

The IMF also emphasizes that two auxiliary factors are vital for the effective functioning of central banks: prudent fiscal policies and sound bank regulations. Prudent fiscal policies reduce government incentives to pressure central banks to finance fiscal debts, where such financing could, in turn, undermine effective monetary policy.

Sound bank regulations, which include the laws, rules, supervisory practices, and policies shaping bank operations, also contribute to successful monetary policy. First, they reduce the risks of systemic bank failures. Such failures can have severe adverse ramifications for economic activity and fiscal debts, hindering and complicating the implementation of monetary policy. Second, sound bank regulations lower the risk that central banks will become reluctant to raise policy rates to combat inflation out of fear that higher rates will trigger bank failures. Thus, with unsound bank regulations, central banks might be more likely to implement monetary policies that limit bank instability risks but increase inflation risks.

Furthermore, although not highlighted by the IMF, sound bank regulations can contribute to monetary policy success by boosting economic growth. Extensive research demonstrates how bank regulations influence bank operations and how efficient, innovative banking systems foster economic growth (e.g., Levine 2025; Barth, Caprio, and Levine 2005). By fostering long-term economic prosperity, sound bank regulations can ease the burdens placed on central bankers beyond any effects on banking system stability.

Are the IMF's Criteria for Effective Central Banking Internally Consistent?

I question whether the IMF's criteria for creating an effectively governed central bank to achieve long-term monetary policy success are fully internally consistent without further guidance.

Three observations motivate this concern. First, the IMF stresses that creating an effective policy institution that deflects short-term political pressures and focuses on the public's long-term interests requires strong governance, accountability, and transparency. While the IMF develops these criteria for the specific case of monetary policy, they are broadly applicable. That is, policy authorities with sufficient independence, well-defined and monitorable objectives,

and mandated transparency are likely more effective at making policy choices focused on long-term prosperity instead of succumbing to short-term political interests than those without these traits.

Second, two of these essential features for creating an effective policy institution do not apply to existing bank regulatory institutions. This contrasts with the success seen in monetary policy institutions. Specifically, many governments have enhanced the accountability and transparency of monetary authorities. Governments give monetary authorities clear mandates and targets and demand that central bankers make their monetary policy actions and reasoning clear to the public. This level of accountability and transparency makes it relatively easy to assess whether central banks are fulfilling their government-mandated missions, and it allows the public to engage in informed, timely debates about central banks' decisions and performance.

However, bank regulatory institutions are different. Governments do not provide bank regulatory authorities with a detailed definition of sound bank regulation, well-specified targets, or numerical goals. For instance, the aim of bank regulation is not simply to create banks that do not go bankrupt. Such an aim would lead to 100% reserve requirements. Instead, bank regulation has complex, conflicting objectives that include the efficient allocation of credit, high-quality banking services, and stability. Governments rarely, if ever, provide bank regulatory authorities with details on navigating these trade-offs or numerical goals defining successful bank regulation.

Besides a lack of clarity of purpose and hence accountability, bank regulatory actions and decision-making processes are anything but transparent, rendering bank regulators essentially unmonitorable. Without such accountability and transparency, it is nearly impossible to ascertain whether bank regulatory authorities are taking actions that contribute to the long-term soundness of the banking system or to the public having an informed, timely debate about bank regulators' decisions and performance.

Third, the IMF argues that besides strong governance, accountability, and transparency, effective monetary policy requires a sound bank regulatory system.

These observations raise significant concerns. Effective monetary policy requires sound bank regulation, which in turn requires a transparent, accountable, and independent bank regulatory authority to deflect short-term political pressures and focus on the public's long-term interests. However, governments have yet to be entirely successful at creating such regulatory authorities. Without further guidance on how to define sound bank regulation, assign clear mandates to bank regulatory authorities, and provide transparent accounting of their decisions and actions to the public, it remains unclear how countries will achieve sound bank regulation and effective monetary policy in the long term.

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GENERAL DISCUSSION

PETER HENRY: Thank you, Ross. And thank you to all of our presenters. I'm going to use my privilege as chair to make a comment and then ask a question. The comment is a generalization of the data that Juan Pablo Nicolini showed us on the secular convergence of inflation in Latin America. That secular convergence of inflation extends far beyond Latin America. If you look at all emerging-market and developing economies, in 1994 their average inflation rate was on the order of 100% per year. And by 2018, it's in the low to mid–single digits. And to just connect that fact to Juan [Pablo]'s point about the potential to disinflate without output losses, an additional fact is that we observe a secular increase in the average growth rate of GDP across emerging-market and developing economies post-1994. Pre-1994, emerging market and developing economies were growing at roughly 3.5% per year. Post-1994 up until COVID, they were growing at 5.5% per year.

Now there are lots of other reforms that are going on at the same time, and Anusha Chari and I talk about all of this in our August 2021 *Journal of Economic Perspectives* article, but it's important to note that this Latin American phenomenon that you document is part of a more general set of phenomena across the emerging and developing world.[1]

My question for Ross, before I open it to the floor—and we'll take a bunch of questions and then let the presenters respond—relates to your criticism of the lack of transparent regulatory targets. I'm just wondering, what is your view about the capital ratios for global systemically important banks, and do those ratios not count in your view as clear and transparent targets?

So let's take a range of questions and then give Ross and others a chance to respond to the questions. Yes, Michael Bordo.

MICHAEL BORDO: I have a question for the Argentinians on the panel. Twenty years ago, I wrote papers with Finn Kydland and Hugh Rockoff and Carlos Végh about the gold standard as a commitment mechanism to maintain stable monetary and fiscal policies, and Argentina was a big player in those papers. In the nineteenth century, the gold standard was a commitment mechanism, which did work pretty well, and it acted as a "*Good Housekeeping* seal of approval" in basically determining whether emerging markets could obtain foreign capital, which they needed for the development. And in the Argentine case, in the latter part of the nineteenth century, this actually worked. It worked up until the 1890 Barings crisis and then afterwards until World War I. And since then, it has not worked. So my question, and Emilio [Ocampo] sort of got at this, is: why did it stop working? Why has Argentina been such a problem?

HENRY: Okay, Paola Sapienza is next and then—I asked the presenters to keep track of all these questions—so we're going to go to Paola Sapienza, Michael Boskin, and Sebastian Edwards, and then come back to the left side of the room. So please be brief with your questions.

PAOLA SAPIENZA: I'm Paola Sapienza and I have a question for Ross. On central bank independence, the emphasis has always been on independence from government rather than independence from the banking system. However, we know that lack of independence from the banking system is a big issue in many countries, not only in developing countries, but even here in the United States. There is even a possibility that more government independence means less independence from the private sector. If central banks typically deal with monetary policy and regulation at the same time, do you think potential conflicts of interests arise?

HENRY: Okay, Michael Boskin, Sebastian Edwards, and then we'll give the presenters a chance to respond.

MICHAEL BOSKIN: Thanks. Three real quick questions based on my own personal experience. First to Ross. When I was CEA [Council of Economic Advisers] chair, and I think John [Taylor] was still there, we considered during the S&L crisis restructuring regulation and consolidating the four regulatory agencies in the US. The Fed was violently opposed, saying they absolutely needed to maintain that authority to conduct monetary policy. Didn't work so well in 2008, apparently. But aside from that, I wasn't quite sure whether you're saying that you wanted to separate out bank supervision and regulation to another agency, or what. I wasn't exactly clear what your point was. Maybe you can clarify.

And on China, Larry Lau and I helped Zhu Rongji restructure the People's Bank to decentralize it along Fed lines, when Zhou Xiaochuan was governor of the People's Bank, and they seemed to be happy with that for a while, but that seems to have receded as everything's been recentralized in Beijing. But this got rid of the problem of the party telling the People's Shoe Factory of Tianjin to hire ten thousand more workers they didn't need and then forcing the banks to lend them the money to pay for it. So there is the question about what was going on in that centralization versus decentralization within the structure of the People's Bank.

And then on Argentina, I had an experience trying to help them with their price statistics, and then Mrs. Kirchner decided that she wanted to get rid of the statisticians. So, if you want to talk about the most fundamental structural thing, it might be useful to think about how you actually have an independent statistical agency as well as an independent central bank. And so, if you have any comments about that and any progress that could be made on that score, I'd appreciate it.

SEBASTIAN EDWARDS: Thank you. Great panel. I have two questions related, actually, to Milton Friedman and Latin America. Of course, Milton would have favored dollarization for Argentina. But apparently, right now it's off the table and it has been replaced

by the 2% crawling peg that Emilio mentioned. We've seen this movie of the preannounced sliding devaluation many times before. And in Latin America we called it the "little table," *tablita*, because it announces the rate of exchange going forward. And every one of those experiments failed, and they failed big-time.

Now, Milton, in his volume *Money Mischief*, has a paper where he compares Chile and Israel, and he gives good grades to Israel because it did have an exit strategy from the tablita. I think it was Michael Bruno who was running the central bank in Israel at the time. So, the question is whether Argentina will have the right strategy to exit from that 2% crawling peg, and whether doing so will still maintain some kind of anchor and a declining inflationary expectation.

And the second question I have is also related to Milton. I was fascinated by Juan Pablo's four different eras, the four periods. The second period is of course the most awful one, and starts in '74. And my question is whether you think that the love affair between Argentina and indexation was in a way behind that. And Milton was in favor of indexation. He went to Brazil in the early 1970s and came back and wrote a number of papers. And in his podcast, or tapes at the time, he talked about indexation in a positive way. And so, the question is: what is Argentina doing about indexation? Once you have a fully indexed economy, it's very easy for the anchor to go away and for inflation to get out of hand.

HENRY: So, Emilio, why don't you go first, then Juan Pablo, and we'll just work our way back to Ross.

EMILIO OCAMPO: So first, the question about the price statistics. I'm not so worried about official price statistics now. Because given what happened with the Kirchners and the tampering with statistics, there's a whole bunch of private outfits that provide price information. So when the government starts tampering with official statistics, nobody pays attention to official statistics. So I'm not so worried. There's the billion-dollar project out of

MIT with Alberto Cavallo. And so we have very accurate price information now. And fortunately, the official agency that tracks prices right now is run very professionally. So the tampering, and that was a strategy, you know? We can reduce inflation by simply lying, but that strategy was very short lived. The people who were in charge are facing judicial prosecution. So I'm not terribly concerned about this issue at the moment.

HENRY: Juan Pablo.

JUAN PABLO NICOLINI: Regarding price statistics, I fully agree with Emilio. So why is Argentina a failed student? I am going to relate the immediate causes to the indexation question in the past for Sebastian. I don't think indexation was a problem. The problem was addiction to the fiscal deficit and printing money to finance it. That's the simple and sad history of Argentina. To elaborate on the deep causes, I will refer to the period of low and stable inflation that Argentina experienced in the early nineties. I will offer an interpretation of why Argentina didn't learn the lesson—to be more precise, why it abandoned a lesson it had learned.

During the nineties, Argentina had the lowest inflation in the region, even lower than in the US. The stabilization of inflation in 1991, following decades of high inflation, was achieved cold turkey, with a strong fiscal adjustment and a currency board that fixed the peso to the dollar with a 100% backing. It was extremely successful, and it was extremely popular—to the point that in 1998, when there was an election, the two main candidates started saying, "We're not going to touch the convertibility," as the rule to peg the peso to the dollar was called.

I have a picture of myself with a T-shirt from my alma mater in the northwest of Argentina beside a huge stone that depicted the name of the candidate for mayor in the four-thousand-person town I was going through. Below the candidate's name, the following large sentence read: "One peso equals one dollar," as convertibility was commonly known at the time.

Argentinian society embraced the new regime in full force. But the whole experiment failed after a series of very large and negative shocks to emerging markets, and amidst a sense within Argentinians that, in spite of substantial fiscal efforts, it had not been helped by the IMF [International Monetary Fund]. I kind of partly share that sense. And that completely changed the mind of the median voter, who went in a completely different direction than the rest of the region. My sense is that if we could have survived that crisis—that was not easy, but if we could have done it—probably the Convertibility would still be alive today. The reason is that, as with the dollarization in Ecuador, nobody would even dare to remove it unless it was in the middle of chaos as it happened.

I believe that the crisis of 2002 made the median voter in Argentina go back to primary school. We'll see whether we've learned the lesson now. Is dollarization off the table? I don't know. I think that what they're doing now is trying to control the storm. And I haven't seen any sign of a formal plan for the future. They're just going day by day. It's like an alcoholic: one day at a time.

HENRY: Zhiguo.

OCAMPO: Yeah, sorry, my apologies, because Michael asked a question before and I didn't say anything. But I think, very briefly, when we look at Argentina's history, whenever we look at the monetary regime, as you pointed out, Argentina had a very successful experience from 1900 until about 1930. Actually, most people here are not going to believe this. But you know, if you go back to 1910, right before the First World War, the Argentine peso was considered one of the strongest currencies in the world. So we had periods of stability. I mean, if we look at two hundred years of monetary history that go back to 1822, we had roughly between fifty and sixty years of price stability.

The interesting thing is the years of price stability that lasted for more than a couple of years, because it's very easy to get

price stability for a couple of years and then go back to your old ways. We had full convertibility, either with gold or with the dollar. But you have to superimpose on the monetary regime another type of regime, which is the populist regime. And the populist regime is about, you know, going too crazy on fiscal profligacy and expanding public spending, etc. I mean, you cannot understand the story of Argentina and the inflation story of Argentina if you don't understand the populist story.

So we like to think about what we know about, which is the monetary thing, the macro thing, but there's something else going on. And that's populism that emerged in Argentina in 1945. And that was critical. And since then, there's no other country in the world that has embraced populism with such passion as Argentina, despite the horrendous results that populism delivered. And so now that would take us into sociology and psychology and all sorts of things that have nothing to do with this conference. So that's my two cents on your question.

HENRY: Okay, Zhiguo.

ZHIGUO HE: Let me be brief. I want to emphasize that in China, the regulatory and monetary policy aspects are distinct. The regulatory aspect falls under the purview of the China Banking and Insurance Regulatory Commission [CBIRC], which you might have heard of. However, separating these functions doesn't automatically guarantee transparency. In fact, the regulatory side is often more complicated and less transparent than the People's Bank of China [PBC]. This ties into my earlier discussion on centralization. Centralization is indeed occurring, with much of the power shifting from the PBC to the CBIRC. This shift allows for easier transmission of central orders through the regulatory line.

HENRY: Ross.

ROSS LEVINE: Yes, capital and liquidity regulations can be made explicit. However, the goal of bank supervision and regulation

is not to achieve a specific capital ratio; the goal is to achieve financial stability while still permitting an efficient allocation of credit. That goal is very vague. Therefore, it is difficult to know whether capital regulation, liquidity regulations, or any set of banking policies achieved those goals.

Also, bank supervisors have broad discretionary powers that are often exercised with a low degree of transparency. Therefore, we often do not know what bank supervisors are doing. This makes it difficult to evaluate the impact of their actions. On the independence of the supervisory agency from banks, I could not agree with you more, Paola. There are reasons to worry about whether bank supervisors work for us, the public. On responding to Michael about how to structure financial regulatory and supervisory agencies, I wrote a book with Jim Barth and Jerry Caprio titled *Guardians of Finance*. There, we pose the question: How can it be in a democratic society that we've allocated so much discretionary influence over the allocation of resources to an entity outside of the democratic process? In the book, we propose a solution. Today, I want to keep the focus on the question.

HENRY: So we are technically over time, but since the last session ran over and we are still within an hour and fifteen minutes, I'm going to use the moderator's privilege to take three quick questions. Bob Hall, John Cochrane, and the person who's traveled the farthest to get to the conference, Amir Yaron. So please be quick and then we'll wrap it up.

ROBERT HALL: This is Bob Hall. In the wrap-up of Latin American countries, it seems to me Chile didn't get full credit for its monetary system. Chile has a secondary stabilized currency, the Unidad de Fomento, defined to be enough Chilean pesos to buy the cost-of-living bundle. It's completely inflation-proof, and large volumes of transactions occur with it.

JOHN COCHRANE: This is primarily for Juan Pablo. You left an impression that all Latin America needed was for its central banks to wake up and say, "We should target 2% inflation," and that cured inflation. Your lovely *Monetary and Fiscal History of Latin America* book left a different impression. My stylized version of all history is that successful disinflations combine monetary, fiscal, and microeconomic reforms. I'm sure that's what you meant.

Related, for the panel, you left the impression that inflation in the COVID era came from central banks lowering interest rates. Well, we had zero interest rates for ten years, and that didn't set off inflation. Japan had zero rates for thirty years, and that didn't set off inflation. I'm sure you didn't mean to leave that impression either.

HENRY: Thank you, "Senator" Cochrane. Over to Amir.

AMIR YARON: Thank you, Peter. The premise that monetary policy is easy to evaluate, while supervision is really hard, is not so obvious. Admittedly, a fragile banking system would significantly harm the ability of monetary policy to function effectively. However, it's important to note that approximately 50% of central banks, such as those in Australia, Canada, and the ECB [European Central Bank], do not have bank-supervision responsibilities. Therefore, it's not necessarily a critical issue.

The tension often lies between stability, also known as prudential concerns, and conduct or competition, which is always a point of contention. The real value of supervision frequently stems from being closely connected to the central bank. This was evident in the UK, where supervision was moved out of the central bank before 2008 and then moved back in after the financial crisis. The key benefit is the exchange of information, including soft information, between the regulator and the banks.

Banks are different entities compared to others due to their leverage and other unique characteristics. When it comes to the

sensitive issue of being the lender of last resort, it is crucial for central banks to have direct contact with banks, and this is where the close relationship becomes particularly valuable.

HENRY: Okay, presenters, if you would like to respond, please do so in no more than a minute.

NICOLINI: The Unidad de Fomento in Chile, you probably know much more, Sebastian, was done when inflation was high, and it's still used today. So, I mean, it's just essentially a way of indexing contracts of different types, and it worked really well.

On a different note, thanks, John. I never meant to suggest that these countries just read a book on inflation targeting and they started doing it. So, no, absolutely. The painful history of inflation in Latin America is explained exclusively by a systematic attempt of governments to spend above their means. To solve the problem, you need to eliminate chronic fiscal deficits. That fiscal consolidation happened starting in the middle of the 1980s and most countries kept it, and that's the reason why inflation is low now in the nine out of eleven. And lack of fiscal consolidation is the symptom evidencing that Argentina and Venezuela did not "learn the lesson."

HENRY: Zhiguo, Ross, anything?

LEVINE: I sincerely question the effectiveness of information between supervisors of financial institutions and those conducting monetary policy. In 2021, Amit Seru and I got into an argument over dinner. I said, "Inflation is running high. The reputation of the Fed is based on inflation. Therefore, they will tighten monetary policy." Amit said, "Oh, no. I've been doing all of this work on banking. If they raise rates, a large proportion of the banking system is going to have negative, or close to negative, net worth. They won't raise rates." Unfortunately, we were both right. And so there was not the sharing of information of the type that we both agreed would be helpful. In the US, the

Fed's bank supervisory and regulatory apparatus does not seem to work well.

HENRY: So with that, let me just recognize that we are under the hour-and-fifteen-minute Taylor rule. And please, join me in thanking the presenters.

Note

1. Anusha Chari, Peter Blair Henry, and Hector Reyes, "The Baker Hypothesis: Stabilization, Structural Reforms, and Economic Growth," *Journal of Economic Perspectives* 35, no. 3 (Summer 2021): 83–108.