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**CAN DOLLARIZATION MITIGATE THE MACROECONOMIC
COST OF POPULISM? LESSONS FROM LATIN AMERICA**

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Can Dollarization Mitigate the Macroeconomic Cost of Populism? Lessons from Latin America

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Abstract

The dollarization debate can be summarized as a trade-off between credibility and flexibility. Argentina is again at its center. Its traumatic exit from a currency board regime in January 2002 convinced many academics that flexibility was more important than credibility. However, its experience since then shows that flexibility in the hands of populist governments can lead to disastrous results. In this paper we employ a variety of statistical techniques to attempt to verify the empirical validity of the hypothesis that dollarization can significantly reduce the macroeconomic cost of left-wing populism. We focus our analysis on Argentina (non-dollarized populism) and Ecuador (dollarized populism). We find that, in terms of real GDP per capita, populism was less costly in Ecuador than in Argentina.

JEL Codes: E42, E50

Keywords: dollarization, populism, economic growth, Argentina, Ecuador, Latin America.

* The authors' views do not necessarily represent the position of UCEMA or other institutions.

1. Introduction

An unsettled question in the debate about the pros and cons of dollarization is whether it can mitigate the cost of populism in terms of economic growth.¹ This is a particularly important issue in Latin America for two reasons. First, left-wing populism, has been endemic in several countries in the region, such as Argentina, Ecuador and Venezuela.² Secondly, since the turn of the century, official dollarization was adopted by Ecuador and El Salvador and is currently being considered by other Latin American countries –most notably and recently by Argentina– to eliminate high, persistent and volatile inflation.

The objective of this paper is to study whether dollarization can significantly reduce the negative impact of populist policies on the rate of growth of real GDP per capita. This requires a comparison between actual and counterfactual rates under two non-exclusive policy regimes: populism and dollarization. We shall restrict the analysis to Latin America, a region where in the last three decades all possible combinations of both regimes have been present.

Of particular interest are the experiences of Argentina and Ecuador, the only countries in Latin America that since 1990 have experimented with both regimes.³ Argentina had a

¹ For a representative literature on dollarization see Alesina and Barro (2001), Calvo (2001), Edwards and Magendzo (2006), Gale and Vivez (2002), Lange and Sauer (2005), Levy-Yeyatti and Sturzenegger (2002), Mendoza (2001), Ocampo and Cachanosky (2022), and Salvatore et al. (2003).

² For the purpose of this paper, when we refer to populism we consider the left-wing variety that has historically prevailed in Latin America (see Edwards, 2019, pp. 81–82; Ocampo & Newland, 2022).

³ In the case of El Salvador it is not easy to categorize its political regime during the period under analysis. From June 2009 until May 2019 it was governed by a succession of leftwing governments and since then by a populist right wing government. In both cases the degree of populism was less severe than in Argentina, Ecuador and Venezuela.

currency board from April 1991 until December 2001, whereas Ecuador dollarized in January 2000. Although a currency board is different from dollarization in very material respects (see Ocampo, 2023 for a discussion of such differences), both regimes have proven effective in drastically reducing high inflation. Argentina during the 1990s serves as an imperfect proxy for a non-populist dollarized regime. Also, starting in 2007 Argentina and Ecuador operated under populist regimes that were quite similar in terms of rhetoric and economic policy: Ecuador under dollarization and Argentina under a hybrid and highly discretionary currency and monetary regime with varying degrees of government control and intervention.

2. Measuring the Impact of Populism on Economic Growth

2.1. When is a Country Populist?

To test the proposed hypothesis, we first need an operational definition of populism, i.e., for any country under study we need an answer to two questions: 1) when did a populist regime start? 2) when did it end? The problem, as Edwards (2019, p. 77) pointed out, is that “real-world populism does not appear in ‘black or white, but rather in shades of gray’” Another problem is that the macroeconomic impact of populist policies outlasts a populist regime.

In the same paper Edwards proposed a distinction between “new” and “classical” populist regimes. Both are led by charismatic leaders with strong personalities who rely on heterodox economic policies to redistribute income. The “classical” form of populism was prevalent before 1990. Dornbusch and Edwards (1991, pp. 77–78) described the typical economic policy under such regimes as relying on “the use of expansive fiscal and credit policies and overvalued currency to accelerate growth and redistribute income.” These experiments generally “ended up with major currency crises, runaway inflation, and a collapse in real wages.”

“New” populism is mostly a 21st century phenomenon. The focus on income redistribution remains, but the policy mix is slightly different. According to Edwards, “new” populist policymakers focus more on regulations, protectionism, intrusive government interventions in factor and good markets. More importantly, they do not rely “exclusively” on money creation to finance excess government spending. One key feature of “classical” populism is absent in its “new” version: fiscal dominance.⁴ In Edwards’ opinion, Venezuela is the paradigm of the former, Bolivia and Ecuador constitute examples of the latter, and Argentina under the Kirchners serves as a hybrid case that combines elements of both.

The evidence from the 21st century confirms the conclusion Dornbusch and Edwards reached three decades ago: in any of its forms, populism has a negative impact on economic growth (Absher et al., 2020; Cachanosky & Padilla, 2020; Dornbusch & Edwards, 1992; Edwards, 2010, 2019; Grier & Maynard, 2016; Ocampo, 2015b). Venezuela provides the strongest empirical confirmation of this hypothesis, followed closely by Argentina, which at the end of 2023 found itself again at the verge of hyper-stagflation.

In a study of the macroeconomic performance of Latin American populist regimes using synthetic control techniques, Absher, Grier, and Grier (2020) found that among a set of populist regimes, only in Ecuador under dollarization GDP kept up with its counterfactual.⁵ Relying on the same technique, a more recent analysis of the Ecuadorean experience found that GDP

⁴ Fiscal dominance can be defined as a situation where where fiscal policy, particularly government spending and taxation, takes precedence and exerts a significant influence over monetary policy. In a fiscally dominant environment, monetary policy decisions are heavily influenced or even dictated by the fiscal authorities, typically the government. Under such scenario, central bank independence is chimerical.

⁵ Their study leaves Argentina out because of the failed attempt by CFK to reform the constitution.

growth outperformed its hypothetical non-dollarized counterfactual (Cachanosky et al., forthcoming). These studies seem to suggest that dollarization mitigates the negative effect that populist policies have on economic growth.

As mentioned earlier, to test the hypothesis proposed in this paper, we first need to determine the beginning and end of a populist regime in a particular country. This is not an easy task. There are several ways to approach the problem, which we summarize below.

The V-Party Populism Index elaborated by the V-Dem Project measures on an annual basis two components of the rhetoric of political parties that are strongly associated with populism: anti-elitism and people-centrism. An index value above 0.75 is indicative of a strong populist rhetoric. When a populist party wins a presidential election, it marks the beginning of a populist regime. When a populist incumbent loses power against a non-populist party, the populist regime ends. In Argentina, the Index of Populism of the governing party exceeded 0.75 from 2005 until 2015, while in Ecuador from 2007 until 2017.⁶ In contrast, in El Salvador, the index for the Farabundo Marti Liberation Front (FMLN) which governed between June 2009 and May 2019 averaged 0.253.

Another way to measure the intensity of populism is with the institutional quality indices elaborated by the V-Dem Institute, particularly those that reflect constraints on the Executive and independence of the Supreme Court. In the case of Ecuador, there is a clear break

⁶ Using 0.75 as a threshold leads to two other important conclusions: 1) the only other country in South America with a populist regime during this period were Bolivia and Venezuela, 2) Brazil did not have a populist regime until the election of Jair Bolsonaro.

between 2007 and 2008. However, in the case of Argentina the indices do not show a discernible deterioration after 2007.

An alternative approach is to observe the actual economic policies typically implemented by a populist regime: exceptionally high government expenditures, growing protectionism, government control of FX market and capital movements, increased regulations that limit the economic freedom of the private sector. The problem with any of these measures is that in the case of a dollarized economy, they are regime dependent. To the extent dollarization mitigates populism, the value of any of these variables will, *caeteris paribus*, be lower.

However, since fiscal profligacy is common to both “classical” and “new” populism, a significant increase in government expenditures as a percentage of GDP might indicate the beginning of a populist regime. In Argentina, the largest increase in ratio since 1993 occurred in 2009 whereas in Ecuador in 2008. Both countries started to significantly diverge from the Latin American average between 2006 and 2008. When measured in real terms, the largest increase in government expenditures in Argentina took place in 2007, whereas in Ecuador, it occurred in 2008.

Protectionism, as measured by foreign trade as a percentage of GDP, is a very imperfect measure, given that during the first decade of the 21st century the surge in commodity prices led to a significant increase in the value of exports. Alternatively, one could look at the growth in export volumes. Although both in the case of Argentina and Ecuador there is a significant deceleration in the period 2007-2015, it provides a very imperfect measure of the intensity of populism.

Controls on capital movements are also indicative of the prevalence of a populist regime. We can compare the evolution of the Index of Financial Openness (IFO) elaborated by Chinn-Ito (2006) for the countries under analysis. In Argentina, the IFO declined markedly in 2006 and reached a value of zero in 2015, while in Ecuador it declined 30% after 2008. However, the average level of financial openness in Ecuador (0.72) was significantly higher than in Argentina (0.14) in the period 2007-2015.⁷ This was due in great measure to dollarization.

Another proxy for the intensity of populist economic policies is the index of economic freedom elaborated by the Heritage Foundation. In both Argentina and Ecuador, the index experienced a significant decline in 2007.⁸ Moreover, the average level for both countries in the period 2007-2015 was almost identical.

None of the above measures gives us a clear-cut answer to the question posed at the beginning of this section. Identification of a populist regime inevitably requires some element of subjectivity. Argentina illustrates the difficulties. The decision of Nestor Kirchner not to seek reelection and propose the candidacy of his wife Cristina Fernández was officially announced on June 1, 2007. However, according to well informed political analysts it was made in November 2006 (see Morales Solá, 2007). Implicit in our decision to use 2007 as the start of the populist regime is the assumption that economic policy started to change after this decision

⁷ It could be argued that this is one of the channels through which dollarization mitigates the impact of populism.

⁸ In the case of the Heritage Foundation Index of Economic Freedom, the value for 2008 reflects conditions prevailing in 2007.

was made to secure her victory.⁹ In December 2015, Mauricio Macri assumed the presidency with an agenda of change. However, from a fiscal standpoint not much changed. According to IMF statistics, the ratio of government expenditures to GDP peaked in 2016 at 42%.

Since an expansionary and unsustainable fiscal policy is the minimum common denominator of most Latin American populist experiences, a historically high ratio of government expenditures to GDP is a key indicator of the prevalence of a populist regime. In essence, a populist regime implies a fiscal regime in which deficits are monetized by the central bank leading to high inflation, or the government raises public debt beyond sustainable levels leading to a sovereign debt crisis. Under dollarization the first option is obviously not available, although Correa in Ecuador managed to degrade the quality of bank money to finance a portion of the substantial deficits incurred by his government.

Another factor that complicates the analysis is how to measure the legacy of populism. A non-populist government that tries to correct the imbalances accumulated under a populist regime is most likely to experience lower growth. Do we assign this lower growth to a non-populist or a populist regime? The experience of Argentina and Ecuador indicates that this legacy can be burdensome and lead to high inflation and/or a sovereign debt crisis with significant impact on growth.

⁹ Alternatively, one could argue that the turning point from a policy perspective was November, 2005 when Nestor Kirchner fired Roberto Lavagna as Minister of Economy. However, it can be argued that 2006 was a transition year.

Based on all the above considerations, in the table below we propose a taxonomy for a select group of Latin American countries (Table 1):

Table 1. Populism and Currency Regime in Latin America in the 21st Century

	Populist (P)	Non-Populist (NP)
Dollarized/Currency Board (D)	Ecuador (2007-16) El Salvador (2010-19)	Argentina 2003-2006 Ecuador (2000-05) El Salvador (2001-07) Panama
Non-dollarized (ND)	Argentina (2007-15) Bolivia (2006-18) Venezuela (1998-23)	Chile Colombia Peru Uruguay

Two caveats are in order. First, we want to emphasize again that a dollarization regime is materially different from a currency board or a traditional fixed exchange regime. There is a substantial difference between pegging a domestic currency and not having a domestic currency at all. Therefore, the inclusion of Argentina between 1991 and 2000 in the DNP category should be taken with a grain of salt.¹⁰ Second, while might be able to objectively identify the beginning and end of a populist regime, the macroeconomic imbalances it engenders, outlast it for several years and condition the policies of a non-populist regime that succeeds it. For example, in the case of Argentina, the economic policy of the Macri administration was conditioned by the legacy of the Kirchner regime (2003-2015). In fact, primary fiscal deficits as a % of GDP were higher in 2016 and 2017 than in 2015 while average government

¹⁰ Using the same criteria, El Salvador between 1995 and 2000 should also be categorized as a DNP. However, given it dollarized in January 2001, we don't need a proxy for this regime.

expenditures as a % of GDP were, on average, one percentage point higher in the period 2016-2019 than in the period 2012-2015. The macroeconomic legacy of populism is persistent.

3. Empirical Evaluation

We propose two approaches to evaluate the impact of populism under dollarization and traditional currency regimes. The first one is what we call a “back of the envelope” (BOTE) or naive approach, which involves a simple comparison of average rates of growth in real GDP per capita for a) the same country in different periods under different regimes, and b) across countries for the same period in which populism co-existed under alternative currency regimes. In either format, this approach lacks proper controls, but it allows us to map the data under different political/fiscal and currency regimes.

The second approach relies on several different statistical methods to achieve the same objective. More specifically, we use a 2SLS, ARMAX, VAR, synthetic control (SC), and a simple real business cycle (RBC) model to extract different GDP performance estimations. Given that every method has its own pros and cons, and the challenges posed by Latin American data, our approach consists of running different models and seeing if they all point towards the same direction, whether or not Ecuador suffered populism less than Argentina in terms of GDP performance and by how much.

3.1. The BOTE Approach

3.1.1. Historical Within Country Comparison

The first challenge when attempting a historical comparison of a particular combination of political/fiscal and currency/monetary regimes for a particular country is that very few countries have alternated between dollarization and populism in the period 1991-2023. If we consider a currency board sufficiently analogous to dollarization (as mentioned earlier, they are fundamentally different), during the period 1991-2023 there are only three countries in Latin America that meet this criterion: Argentina, Ecuador and El Salvador. The second challenge is that these countries experienced a set of shocks of a completely different nature. A simple comparison does not allow us to isolate the effect of such shocks. Also, the comparison does not control for the effects of the macroeconomic cycles and the terms of trade. Despite these limitations, it offers a first approximation to the problem and supports the hypothesis that dollarization significantly mitigates the negative impact of populism on real GDP per capita growth.

Table 2. Country monetary and political regimes classification (1991-2023)

Country	DP	NDP	DNP	NDNP
Argentina	n/a	2007-18	1991-00	2002-06
Ecuador	2007-19	n/a	2000-06, 2018-23	1991-99
El Salvador	2009-23	n/a	2001-08	1991-00

Table 3. Average growth rate per capita by country and monetary and political regimes classification

	Type of regime				Impact of D		Impact of P	
	DP	NPD	DNP	NDNP	P	NP	D	NC
Argentina	n/a	0.6%	2.3%	2.7%	n/a	-0.4%	n/a	-2.0%
Ecuador	1.6%	n/a	2.5%	0.5%	n/a	1.3%	-0.9%	n/a
El Salvador	2.1%	n/a	1.8%	1.9%	n/a	-0.6%	0.1%	n/a
Average					n/a	0.1%	-0.4%	-2.0%

3.1.2. Cross Country Comparison

To the extent the economies are comparable and exposed to the same external shocks, a cross-country comparison offers more promise than the historical one as it factors in cyclical considerations and terms of trade. The first obvious comparison is between Argentina and Ecuador. Since during the period 2007-2023, both countries experienced the full impact of a populist regime and had to confront its legacy under opposite currency regimes, they provide the basic raw material to test the proposed hypothesis.

The main difference between Argentina and Ecuador is size. Argentina's GDP has historically been between four and five times that of Ecuador. The tradable sector is similar in size in both countries, but Argentina has a significantly larger industrial sector. In both countries commodity exports account for two thirds of total exports. In the case of Argentina, they originate in the agricultural sector whereas in Ecuador in the energy sector. Despite these differences, the business cycles of both economies are fairly synchronized. If we take the period 1961-2000, real GDP per capita peaked in 1998 in both countries, and by 2007, it had increased by a similar percentage. Both countries experienced a deep financial crisis and a sovereign default within a two-year period (Argentina in 2001 and Ecuador in 1999). This is not surprising given that, according to several studies, this is the case for the largest Latin American economies, which are exposed to common external shocks (Camacho & Palmieri, 2017; Campos & Ruiz Andújar, 2022). Also, in both countries a populist regime took advantage of

the upswing of the commodity price cycle to increase the ratio of government expenditures to GDP to historically high levels. Between 2007 and 2017 the trajectory of this ratio is almost indistinguishable. In both cases, the legacy of unsustainable public debt brought about by populism was “resolved” through a sovereign debt default in early 2020. Therefore, although imperfect, a simple comparison between the trajectory of real GDP per capita in Argentina and Ecuador between 2007 and 2023 offers a first approximation to evaluate whether dollarization mitigated the macroeconomic cost of populism and its legacy. For this comparison, we again rely on annual data included in the IMF’s World Economic Outlook database published in April 2024.

The result of the comparison also supports the hypothesis we are seeking to test empirically, i.e., dollarization mitigates the economic cost of populism. Cross-country comparison shows that between 2007 and 2023 Ecuador’s real GDP per capita grew faster than Argentina’s, its trajectory was less volatile, and its inflation rate was significantly lower.

Table 4. Growth rate and inflation under dollarized and non-dollarized populism
GDP per capita, rate of growth

	Average	Standard deviation	Annual inflation
Argentina	0.4%	5.6%	40.7%
Ecuador	1.6%	4.4%	2.7%

We can add to the comparison other countries that had different monetary and policy regimes during the period 2007-2023. This leads to four possible combinations: 1) a dollarized populist regime (DP) (Ecuador), 2) a dollarized non-populist regime (DNP) (Panama), 3) a non-dollarized non-populist regime (NDNP) (an average of Colombia and Peru) and, 4) a non-dollarized populist regime (NDP) (Argentina). The results of this comparison are summarized below:

Table 5. The impact of dollarization and populism on real GDP per capita growth (2007 – 2023)

	Populist (P)	Non-populist (NP)	Impact of populism
Dollarized (D)	1.6%	3.7%	-2.1%
Non-dollarized (ND)	-0.2%	2.4%	-2.6%
Impact of dollarization	1.8%	1.3%	

DP: Ecuador, DNP: Panama, NDNP: Colombia and Peru (average), NDP: Argentina

Although this approach also has several limitations (e.g., it ignores the effect of other explanatory factors besides the monetary and policy regimes such as convergence, different initial factor endowments, idiosyncratic shocks, etc.), it suggests that during the period under analysis, the negative impact of populism on real GDP per capita growth rates was partially mitigated by dollarization.

Finally, employing the same methodology but using instead higher frequency data, we analyze the impact of three major external shocks on each country’s macroeconomic performance: the global financial crisis in 2008-2010 (GFC), the reversal of the commodity price cycle from 2012 until 2016 and the Covid-19 shock in 2020-21. For this comparison, we use quarterly real GDP data from the World Bank’s Global Economic Monitor database for the period 2007-2023.¹¹ Greater vulnerability to external shocks is one of the objections leveled against dollarization is that it makes the economy “more vulnerable to shocks and prone to volatility” (Jacome, 2020).

¹¹ This database does not provide data for Panama. For this country we used SECMCA data available until March 2023.

Table 6. Real GDP, annual rates of growth

Average quarterly GDP growth rates	Dec-2007 to Dec-2010	Mar-2012 to Mar-2016	Dec-2019 to Dec-2023
Argentina	0.8%	0.0%	0.3%
Bolivia	1.1%	1.4%	0.7%
Brazil	1.1%	-0.2%	0.5%
Chile	0.9%	0.7%	0.7%
Colombia	0.8%	1.0%	0.8%
Costa Rica	0.8%	0.9%	0.9%
Ecuador	1.1%	0.8%	0.6%
El Salvador	0.2%	0.5%	0.9%
Guatemala	0.6%	0.8%	0.8%
Honduras	0.5%	0.8%	0.8%
Mexico	0.1%	0.5%	0.5%
Nicaragua	0.5%	1.3%	1.0%
Panama	1.6%	1.4%	1.9%
Paraguay	1.4%	0.9%	0.6%
Peru	1.5%	1.1%	0.7%
Uruguay	1.5%	0.8%	0.4%
Average Dollarized	1.0%	0.9%	1.1%
Average Non-dollarized	0.9%	0.8%	0.7%

Source: Authors based on World Bank Global Economic Monitor and SECMCA data.

This analysis also sheds light on another issue that comes up in the dollarization debate: its impact on macroeconomic stability. It has been argued that dollarization increases macroeconomic volatility as measured by the standard deviation of GDP growth rates (Duncan, 1983; Jacome, 2020; Schmitt-Grohe & Uribe, 2001). As can be seen in the following table, during the period 2007-2023, when the global economy experienced some of the most abrupt real and financial shocks since the 1930s, the volatility of real GDP growth of Ecuador was not significantly different from that in several non-dollarized economies and was lower than in Peru, often mentioned as having a currency regime that is superior to dollarization.

Table 7. Real GDP, quarterly growth rates between March 2007 and December 2023

	Average	Std. dev
Argentina	0.3%	3.0%
Bolivia	1.0%	3.6%
Brazil	0.5%	1.9%
Chile	0.7%	2.3%
Colombia	0.9%	2.8%
Ecuador	0.8%	3.1%
Mexico	0.4%	3.3%
Peru	1.0%	4.7%
Uruguay	0.7%	2.4%
Median non-dollarized economies	0.7%	2.9%

Source: World Bank Global Economic Monitor

3.2. Econometric Techniques

In this section we summarize and compare the results of testing our hypothesis using alternative statistical techniques. Populism estimations are for the period 2007 – 2016. A detailed explanation of each method is offered in the appendix.

As follows from the previous discussion, the methods below compare output behavior for Argentina (non-dollarized populism) and Ecuador (dollarized populism). We define the growth gap as the difference between the observed rate of growth of real GDP per capita and the model’s estimation. A negative (positive) gap means that the observed growth is below (above) what the model predicts. 2SLS, ARMAX, VAR, and SC estimations show a smaller gap for Ecuador than Argentina (Table 8). These results must be taken with care. For instance, the 2SLS model shows a positive gap for populism under dollarization in the case of Ecuador, which would indicate that populism was good for Ecuador’s GDP. Yet, this result is consistent with Absher, Grier, and Grier (2019), for whom populism did not affect Ecuador. The ARMAX and VAR gaps for Argentina may be considered exaggerated. Yet, all models point to the same *pattern prediction*, populism is less costly (in terms of GDP per capita) under a dollarized regime than under a non-dollarized regime (Table 8).

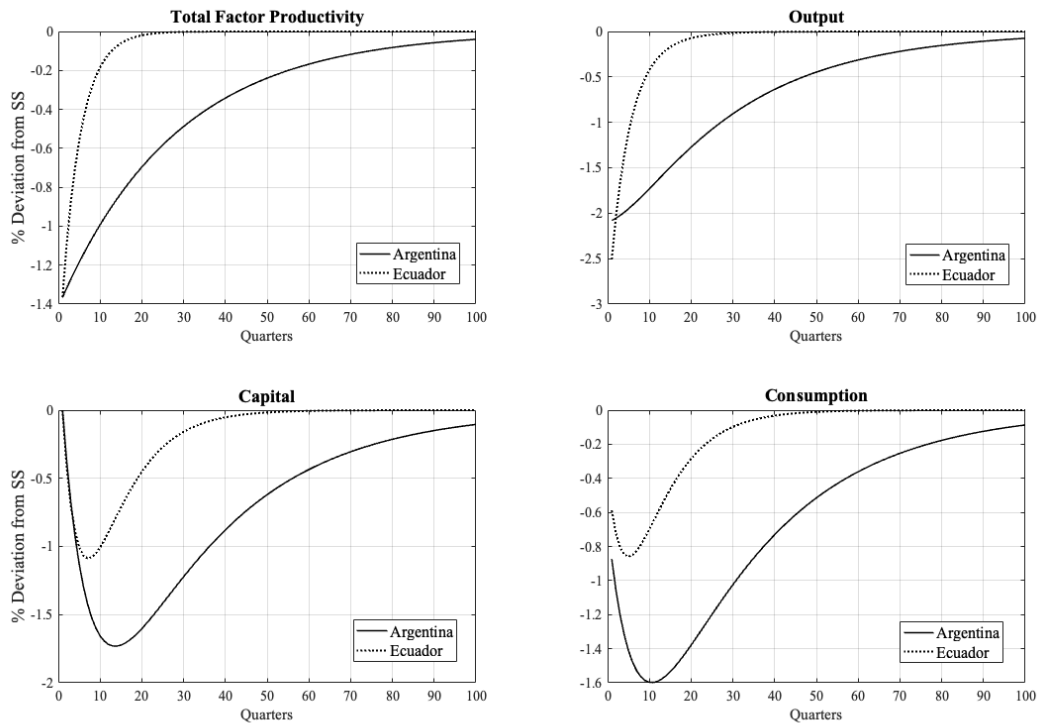
Table 8. Estimated cost of populism (output gap) under alternative econometric methods

Method	Argentina	Ecuador
2SLS	-0.64%	0.99%
ARMAX	-3.10%	-1.10%
VAR	-5.50%	-1.70%
SC	-0.96%	-0.71%

The impact of a country's economic policies can also be tested using a simple real business cycle (RBC) model calibrated for Argentina and Ecuador along the lines proposed by Kydland and Zarazaga (2001) and Zarazaga (2006). We calibrate each country covering as close as possible the duration of a populist regime, to better identify any different reaction due to presence or absence of dollarization (see the appendix for more details).

The calibrated RBC models are then used to generate impulse response functions (IRFs) that can be compared to assess how the countries differ in their response to an adverse productivity shock of the same initial magnitude. From Figure 1 we see that when compared to Argentina, Ecuador is less affected by the negative shock and also shows a quicker recovery.

Figure 1. RBC IRF's to a shock of similar size, Argentina and Ecuador under a populist regime.



One limitation of this RBC model is that it assumes a closed economy, which is a limitation shared by the models developed by Kydland and Zarazaga (2001, 2004) and Zarazaga (2006). Another limitation is that the proposed model is unable to directly account for the role played by dollarization in mitigating the potential adverse effects of populist policies. However, the differences observed in the IRFs for both countries are consistent with our earlier results and serve as another point of comparison.

4. How Does Dollarization Mitigate the Negative Effects of Populism?

Dollarization mitigates the negative impact of populism on economic growth through a variety of channels. The most obvious and important of these channels is the elimination of high,

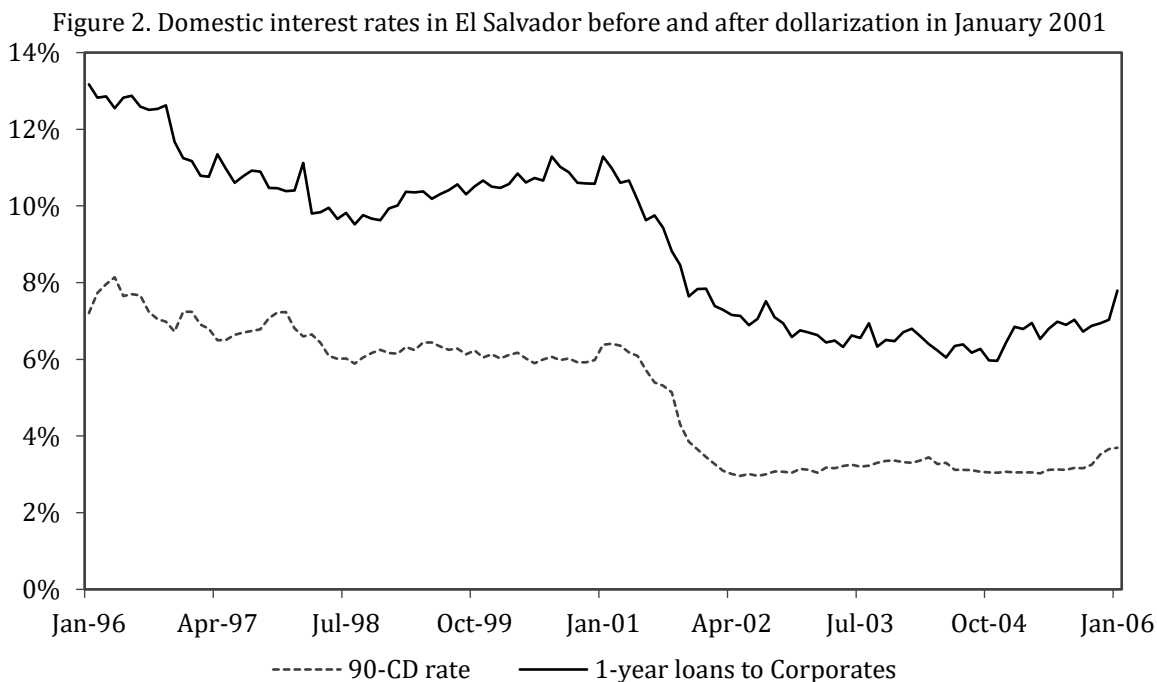
persistent and volatile inflation. As Dornbusch (2001, p. 240) pointed out decades ago “inflation hurts growth, and high and unstable inflation does so with a vengeance. Hence, a monetary regime that delivers and maintains low inflation, other things equal, will help growth.” There are plenty of studies that confirm that the negative impact of inflation on growth is greater at double-digit levels (Espinoza et al., 2012; Fischer, 1983, 1993; Khan & Senhadji, 2001).

The comparison between Argentina and Ecuador illustrates this point. Even though Rafael Correa managed to use bank reserves to partially finance recurring fiscal deficits, inflation remained at U.S. levels throughout his presidency in the face of several supply shocks, such as the global financial crisis and sovereign debt default in 2008 and a devastating earthquake in 2016. In contrast, Argentina’s inflation rate increased rapidly after 2007, the year that marked the beginning of the first populist experiment, and at the end of 2023 approached hyperinflationary levels (the monthly inflation rate in December 2023 was 25.5%).

It is worth noting that some contemporary Latin American populist regimes, like Bolivia under Evo Morales (2006 – 2019) and Nicaragua under Daniel Ortega (since 2007), have managed to control inflation by preserving central bank independence. To the extent these results are achieved without tampering with price statistics or price controls, dollarization would not deliver a significant benefit through this channel.

Another important channel through which dollarization reduces the negative impact of populism on economic growth is interest rates. Dollarization eliminates the devaluation premium, which in turn, brings about a reduction in the economy’s average cost of capital, which in turn, encourages higher levels of investment and higher real wages (see Dornbusch 2001 for a discussion). This effect can be seen more clearly in the case of El Salvador, which from

1995 until 2000 had a *de facto* currency board and dollar interest rates. As shown by the chart below, domestic interest rates fell significantly after the dollar was adopted as legal tender in January 2001 (Figure 2). This effect took longer to materialize in Ecuador, probably due to pervasive political uncertainty, an oligopolistic structure in the banking system and capital controls.



Source: SECMCA

A related mitigating effect operates through the country risk premium. Dollarization divorces fiscal from monetary matters, which in turn, can break the link between the cost of financing of the private sector and the public sector. Historically, in non-dollarized economies, country risk premiums have set a floor for most private sector borrowers due to the existence of transfer risk. This has not been the case in Ecuador, El Salvador, and Panama.¹² Since

¹² It is also not the case in Argentina today, but this is due to the heavy restrictions on capital flows. Private sector bonds offer the only hedge to investors and multinationals who cannot repatriate funds.

dollarization, the government of Ecuador defaulted twice on its foreign debt (2008 and 2020). In both instances, country risk premiums, as measured by the EMBI+, skyrocketed. However, interest rates in the domestic banking system remained relatively unaltered and, after a brief interruption, bank credit to the private sector continued to grow. El Salvador hasn't defaulted on its debt since dollarizing in early 2001, but the country's risk premium has increased significantly since 2019 because of persistent fiscal deficits. As in the case of Ecuador, this increase did not translate into higher interest rates for private borrowers.

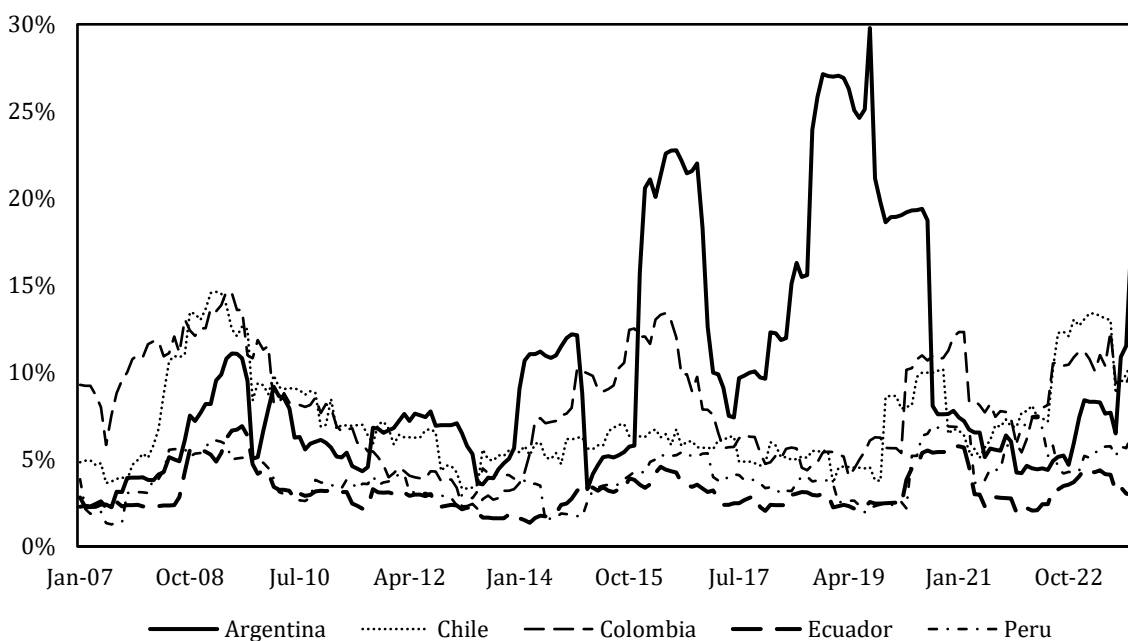
Another important channel through which dollarization reduces the cost of populism is through the appreciation of the real exchange rate. As pointed out by Dornbusch and Edwards (1991), historically, populist economic policies have led to a strongly overvalued domestic currency. This, in turn, can create problems in the external sector as it disincentivizes exports and artificially promotes imports. To neutralize this effect, populist governments typically introduce controls on trade and capital flows and intervene in the foreign exchange markets. These measures not only introduce costly distortions in the allocation process but also foster corruption. It is worth noting that the real exchange rate appreciated more in Argentina under a hybrid and discretionary currency regime than in Ecuador under dollarization.

A greater volatility of the RER also has a negative effect on real GDP per capita growth. Several empirical single and cross-country studies support the hypothesis that real exchange rate volatility has a negative impact on economic growth (Cottani et al., 1990; Janus & Crichton, 2015; Rapetti, 2020; Rapetti et al., 2012; Schnabl, 2008; Vieira et al., 2013; Warnes, 2022). One important channel through which this negative effect operates is higher levels of uncertainty, which have a negative impact on private investment, particularly in the tradable sector,

which leads to lower growth in exports, productivity, and GDP (Bermúdez et al., 2022). The evidence also suggests that, in developing countries, the negative impact of RER volatility on growth is stronger under flexible exchange rate regimes (Barguelli et al., 2018)..

As can be seen in the following graph for Argentina, Chile, Colombia, Ecuador, and Peru since January 2007 the volatility of the RER, as measured by the standard deviation, was significantly higher under floating or hybrid FX regimes than under dollarization.

Figure 3. Real exchange rate annual volatility



Source: Authors calculations based on World Bank economic monitor data.

However, dollarization cannot eliminate legal and political uncertainty. In Ecuador, Correa’s policies and rhetoric scared away foreign investment, which was essential to take full advantage of the boom in oil prices that took place between 2007 and mid 2012. As a percentage of the average of Peru and Colombia, FDI fell from 28.6% for the period 2001-2006 to an average of 6.5% in the period 2007-2017. In the same periods, crude oil production in relation to Colombia fell from an average of 84% to an average of 64%.

Critics of dollarization usually point out that it can lead to a pro-cyclical appreciation of the real exchange rate, particularly during the US dollar strengthens globally. This is particularly harmful to commodity-exporting countries such as Argentina and Ecuador, i.e., real appreciation of the domestic currency occurs at times when the terms of trade deteriorate. The data confirms that this was the case between 2012 and 2016. However, recent developments offer a more nuanced picture. Since 2020 the United States has become a net commodity exporter. This has led to more sensitivity of its terms of trade to the commodity cycle, which in turn seems to be affecting the real exchange rate.

The available evidence from Latin America also suggests that, under hybrid FX regimes, populist policies provoke an even more procyclical behavior of the real exchange rate than non-populist policies under a fixed exchange rate regime. The reason is simple: populist policies tend to overheat the economy and lead to higher inflation. The typical policy response of populist governments is to impose FX and capital controls and slow the nominal devaluation of the peso, which inevitably leads to an overvalued currency and generates all sorts of allocative distortions in the economy.

The evidence since 1991 supports the hypothesis that, in Argentina, real exchange rate appreciation was stronger under a populist *cum* hybrid FX regime (2007-2015) than during non-populist convertibility (1991-2001). In dollarized Ecuador, the real appreciation of the local currency was stronger under Correa's presidency than before or after.

A regression of a simple log model that explains the domestic real exchange rate as a function of the US real exchange rate shows a higher sensitivity under populist regimes independently of the currency regime. As can be seen in the table below, in the case of Argentina, this sensitivity increased during Cristina Kirchner's second term, when populism intensified.

Table 9. Simple OLS. Domestic RER reaction to US RER.

	Slope	<i>t</i> -Stat	<i>R</i> ²
Argentina			
Convertibility	0.8585	11.2734	0.5002
Kirchnerism (Jan-07 – Nov-15)	1.6986	6.9965	0.3179
Kirchnerism (Jan-11 – Nov-15)	1.5880	15.6524	0.8113
Ecuador			
Before Correa (Jan-02 – Dec-06)	0.4772	4.0475	0.2361
Correa (Jan-07 – May-17)	0.8829	11.2434	0.5068
After Correa (Jun-17 – Oct-23)	0.0139	0.4569	0.0028

These results are not due to a spurious correlation. Since 1973, a strong appreciation of the dollar has been correlated with weaker commodity prices (the exception was 2022 due to the Ukraine invasion.) Interestingly, as shown by Ocampo (2015a), in Argentina since 1945, the cycles of populism have been closely correlated with the global cycle of commodity prices. The upward phase of the latter coincides with the expansion of the former and vice-versa. This means that when commodity prices are weaker (the dollar is stronger), populist regimes tend to adopt policies that lead to a strong appreciation of the domestic currency. This is because the nominal exchange rate is used as an anchor to fight inflation (together with price controls, restrictions on capital movements, and intervention in FX markets.) In other words, when it comes to the real exchange rate, populism tends to be more pro-cyclical than dollarization (or any other hard peg).

Finally, another important benefit of dollarization is a deepening of the domestic capital markets and a lengthening of the planning horizons of economic agents. This in turn, “is conducive to investment and risk-taking, which translates into growth, and this closes a virtuous circle” (Dornbusch, 2001, p. 240). Although populist policies can introduce uncertainty, they cannot eliminate these benefits.

5. Conclusions

The adoption of dollarization in several countries has added substantial and valuable data to test many of the hypotheses advanced during the debates that took place at the beginning of the century. The dollarization debate has been usually framed as a trade-off between credibility and flexibility. Argentina's traumatic exit from its currency board in 2002 convinced many in the academic world that flexibility was more important than credibility. However, Argentina's experience during the last 25 years shows that flexibility in the hands of populist governments can lead to disastrous results. In countries that suffer from endemic populism, such as Argentina and Venezuela, dollarization offers the only hope for lasting stability.

A statistical analysis using a variety of alternative methods lends strong empirical support to the hypothesis that dollarization significantly mitigates the macroeconomic cost of left-wing populism. Ecuadoreans under a populist regime constrained by dollarization have fared better than Argentines with a populist regime that was monetarily empowered both in terms of the rate of growth of GDP and its variability and the inflation rate.

6. References

- [1] Absher, S., Grier, K., & Grier, R. (2020). The Economic Consequences of Durable Left-Populist Regimes in Latin America. *Journal of Economic Behavior & Organization*, 177, 787–817. <https://doi.org/10.1016/j.jebo.2020.07.001>
- [2] Alesina, A., & Barro, R. J. (2001). Dollarization. *American Economic Review*, 91(2), 381–385. <https://doi.org/10.1257/aer.91.2.381>
- [3] Barguelli, A., Ben-Salha, O., & Zmami, M. (2018). Exchange Rate Volatility and Economic Growth. *Journal of Economic Integration*, 33(2), 1302–1336. <https://doi.org/10.11130/jei.2018.33.2.1302>
- [4] Barro, R. J. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics*, 106(2), 407–441.
- [5] Barro, R. J. (1997). *Determinants of Economic Growth: A Cross-Country Empirical Study* (294398; Harvard Institute for International Development Papers). Harvard University.
- [6] Bermúdez, C., Debús, C., & Aromí, D. (2022). Uncertainty and Economic Growth: Evidence from Latin America. *Revista CEPAL*.
- [7] Cachanosky, N., Ocampo, E., Hernández, K. C., & Ramseur, J. (forthcoming). Did Dollarization Help Ecuador? *Scottish Journal of Political Economy*. <https://doi.org/10.1111/sjpe.12397>
- [8] Cachanosky, N., & Padilla, A. (2020). A Panel Data Analysis of Latin American Populism. *Constitutional Political Economy*, 31(3), 329–343. <https://doi.org/10.1007/s10602-020-09302-w>
- [9] Calvo, G. A. (2001). Capital Markets and the Exchange Rate, with Special Reference to the Dollarization Debate in Latin America. *Journal of Money, Credit and Banking*, 33(2), 312–334.

- [10] Camacho, M., & Palmieri, G. (2017). Latin American Cycles: Has Anything Changed After the Great Recession? *Emerging Markets Finance and Trade*, 53(5), 1170–1183. <https://doi.org/10.1080/1540496X.2016.1163259>
- [11] Campos, L., & Ruiz Andújar, J. (2022). Common and idiosyncratic components of Latin American business cycles connectedness. *Journal of Applied Economics*, 25(1), 691–722. <https://doi.org/10.1080/15140326.2022.2044979>
- [12] Chinn, M. D., & Ito, H. (2006). What matters for financial development? Capital controls, institutions, and interactions. *Journal of Development Economics*, 81(1), 163–192. <https://doi.org/10.1016/j.jdeveco.2005.05.010>
- [13] Christiano, L. J. (2002). Solving Dynamic Equilibrium Models by a Method of Undetermined Coefficients. *Computational Economics*, 20(1/2), 21–55. <https://doi.org/10.1023/A:1020534927853>
- [14] Cottani, J. A., Cavallo, D. F., & Shahbaz, K. (1990). Real Exchange Rate Behavior and Economic Performance in LDCs. *Economic Development and Cultural Change*, 39(1), 61–76.
- [15] De Gregorio, J., & Lee, J.-W. (1999). *Economic Growth in Latin America: Sources and Prospects* (Documentos de Trabajo). Centro de Economía Aplicada.
- [16] Dornbusch, R. (2001). Fewer Monies, Better Monies. *American Economic Review*, 91(2), 238–242. <https://doi.org/10.1257/aer.91.2.238>
- [17] Dornbusch, R., & Edwards, S. (1991). The Macroeconomics of Populism. In R. Dornbusch & S. Edwards (Eds.), *The Macroeconomics of Populism in Latin America* (pp. 7–13). University of Chicago Press.
- [18] Dornbusch, R., & Edwards, S. (Eds.). (1992). *The Macroeconomics of Populism in Latin America*. University of Chicago Press.
- [19] Duncan, T. (1983). La Política Fiscal Durante el Gobierno de Juárez Celman, 1886–1890. Una Audaz Estrategia Financiera Internacional. *Desarrollo Económico*, 23(89), 11–34.

- [20] Edwards, S. (2010). *Left Behind: Latin America and the False Promise of Populism*. Chicago University Press.
- [21] Edwards, S. (2019). On Latin American Populism, and Its Echoes around the World. *Journal of Economic Perspectives*, 33(4), 76–99. <https://doi.org/10.1257/jep.33.4.76>
- [22] Edwards, S., & Magendzo W., I. (2006). Strict Dollarization and Economic Performance: An Empirical Investigation. *Journal of Money, Credit, and Banking*, 38(1), 269–282. <https://doi.org/10.1353/mcb.2006.0016>
- [23] Espinoza, R., Leon, H., & Prasad, A. (2012). When Should We Worry about Inflation? *The World Bank Economic Review*, 26(1), 100–127. <https://doi.org/10.1093/wber/lhr043>
- [24] Fischer, S. (1983). *Inflation and Growth* (1235; NBER Working Paper). National Bureau of Economic Research.
- [25] Fischer, S. (1993). *The Role of Macroeconomic Factors in Growth* (4565; NBER Working Paper). National Bureau of Economic Research.
- [26] Gale, D., & Vivez, X. (2002). Dollarization, Bailouts, and the Stability of the Banking System. *The Quarterly Journal of Economics*, 117(2), 467–502.
- [27] Gollin, D. (2002). Getting Income Shares Right. *Journal of Political Economy*, 110(2), 458–474. <https://doi.org/10.1086/338747>
- [28] Grier, K., & Maynard, N. (2016). The Economic Consequences of Hugo Chavez: A Synthetic Control Analysis. *Journal of Economic Behavior & Organization*, 125, 1–21. <https://doi.org/10.1016/j.jebo.2015.12.011>
- [29] Jacome, L. (2020). Dollarisation Would not Save Argentina. *Financial Times*. <https://www.ft.com/content/b2ce1c18-1786-40eb-b741-a173756f24d5>
- [30] Janus, T., & Crichton, D. R. (2015). Real Exchange Rate Volatility, Economic Growth and the Euro. *Journal of Economic Integration*, 30(1), 148–171. <https://doi.org/10.11130/jei.2015.30.1.148>

- [31] Kehoe, Timothy J. (2003). *What Can we Learn From the Currency Crisis in Argentina* (318; Staff Report). Federal Reserve Bank of Minneapolis.
- [32] Khan, M. S., & Senhadji, A. S. (2001). *Threshold Effects in the Relationship Between Inflation and Growth* (48:1; IMF Staff Papers). International Monetary Fund.
- [33] Kydland, F. E., & Zarazaga, Carlos. (2001). *Argentina's Lost Decade* (0107; Working Papers). Federal Reserve Bank of Dallas.
- [34] Kydland, F. E., & Zarazaga, Carlos. (2004). *Argentina's Capital Gap Puzzle* (0504; Center for Latin America Working Papers). Federal Reserve Bank of Dallas.
- [35] Lange, C., & Sauer, C. (2005). Dollarization in Latin America: Seigniorage Costs and Policy Implications. *The Quarterly Review of Economics and Finance*, 45(4–5), 662–679. <https://doi.org/10.1016/j.qref.2004.01.002>
- [36] Levy-Yeyati, E., & Sturzenegger, F. (Eds.). (2002). *Dollarization: Debates and Policy Alternatives*. The MIT Press.
- [37] Mendoza, E. G. (2001). The Benefits of Dollarization When Stabilization Policy Lacks Credibility and Financial Markets are Imperfect. *Journal of Money, Credit and Banking*, 33(2), 440–474.
- [38] Morales Solá, J. (2007). Confirmado: La Candidata será Cristina Kirchner. *La Nación*.
- [39] Ocampo, E. (2015a). *Commodity Price Booms and Populist Cycles. An Explanation of Argentina's Decline in the 20th Century* (Documentos de Trabajo). UCEMA.
- [40] Ocampo, E. (2015b). *Entrampados en la Farsa: El Populismo y la Decadencia Argentina*. Claridad.
- [41] Ocampo, E. (2023). *Dollarization as an Effective Commitment Device: The Case of Argentina* (848; Documentos de Trabajo). Universidad del CEMA.
- [42] Ocampo, E., & Cachanosky, N. (2022). *Dolarización: Una Solución para Argentina*. Editorial Claridad.

- [43] Ocampo, E., & Newland, C. (2022). Populist Economic Thought: The Legacy of Juan Domingo Perón. In B. Paulson, J. Merrifield, & S. Hanke (Eds.), *Public Debt Sustainability: International Perspectives*. Rowman and Littlefield.
- [44] Rapetti, M. (2020). The Real Exchange Rate and Economic Growth: A Survey. *Journal of Globalization and Development*, 11(2), 20190024. <https://doi.org/10.1515/jgd-2019-0024>
- [45] Rapetti, M., Skott, P., & Razmi, A. (2012). The real exchange rate and economic growth: Are developing countries different? *International Review of Applied Economics*, 26(6), 735–753. <https://doi.org/10.1080/02692171.2012.686483>
- [46] Salvatore, D., Deam, J. W., & Willet, T. (Eds.). (2003). *The Dollarization Debate*. Oxford University Press.
- [47] Schmitt-Grohe, S., & Uribe, M. (2001). Stabilization Policy and the Costs of Dollarization. *Journal of Money, Credit and Banking*, 33(2), 482. <https://doi.org/10.2307/2673912>
- [48] Schnabl, G. (2008). Exchange rate volatility and growth in small open economies at the EMU periphery. *Economic Systems*, 32(1), 70–91. <https://doi.org/10.1016/j.eco-sys.2007.06.006>
- [49] Spruk, R. (2018). *The Rise and Fall of Argentina* (Mercatus Working Paper). Mercatus Center.
- [50] Vieira, F. V., Holland, M., Da Silva, C. G., & Bottecchia, L. C. (2013). Growth and exchange rate volatility: A panel data analysis. *Applied Economics*, 45(26), 3733–3741. <https://doi.org/10.1080/00036846.2012.730135>
- [51] Warnes, I. (2022). The Impact of Exchange Rate Volatility on Economic Growth and International Trade. *Revista Cultura Económica*, 104(Diciembre), 49–67.
- [52] Zarazaga, Carlos, E. J. M. (2006). *Argentina's Unimpressive Recovery: Insights from a Real Business-Cycle Approach* (0606; Research Department Working Paper). Federal Reserve Bank of Dallas.

7. Appendix

7.1. 2SLS Model

The 2SLS estimation follows Barro (1991, 1997) and De Gregorio and Lee (1999). The model uses ten-year periods starting in 1976. This is a “short” dataset on the time-period dimension, as it only has four decades (1986, 1996, 2006). Exogenous variables are a) initial value of GDP per capita, b) initial value of GDP per capita squared, c) the fertility rate, d) foreign direct investment (FDI) (net inflows as a % GDP), e) human capital index, f) percent change of terms of trade, g) dummies for Argentina and Ecuador, and high-income countries, h) and decade-dummies. The endogenous variables are a) capital stock per capita, b) standard deviation of the inflation rate, and c) an institutional proxy. The institutional proxy is the arithmetic average of three V-Dem indices, rule of law, liberal democracy, and liberal democracy squared. Finally, the instrumental variables are initial values (1976) of a) FDI, b) government spending (as a % of GDP), c) V-Dem’s liberal democracy, d) V-Dem’s rule of law, f) capital stock per capita, and g) dummies for Spain and Portugal as the colonizer country.

Table 10. 2SLS regression output.

Dependent variable: y	Coeff.	std. err.	z	p-value
Constant	3.6535	5.2946	0.69	0.490
<i>Exogenous variables</i>				
y(t=0)	-.0002	.0005	-0.36	0.718
y(t=0) sq.	.0000	.0000	0.16	0.872
Fertility rate	-.7336	.3792	-1.93	0.053
FDI (net inflows, %GDP)	.2157	.1663	1.30	0.195
HC Index	.9179	1.4944	0.61	0.539
Terms of Trade (% change)	.1364	.1654	0.82	0.410
Dummy (ARG)	1.7881	2.0289	0.88	0.378
Dummy (ECU)	-.0342	1.0760	-0.03	0.975
Dummy (High Income)	.6862	.6578	1.04	0.297
Dummy (1986)	.0475	.5708	0.08	0.934
Dummy (1996)	1.3783	.4740	2.91	0.004
<i>Endogenous variables</i>				
Capital stock per capita	-.0000	.0000	-0.56	0.576
Inflation (sd. Dev.)	-.0387	.0174	-2.23	0.026
Institutions	-1.8720	1.1994	-1.56	0.119

Variable y denotes the ten-year growth rate of GDP per capita on a yearly basis.

Number of observations	46
R-squared	0.4407

We use the model estimation to forecast the growth rate for Argentina and Ecuador for the period 2007 – 2015 (using average values for each regressor). We then compare the observed growth rate with the model estimation.

The sample size and countries included in the estimation are similar to those in the Barro and De Gregorio and Lee studies mentioned above. Yet, the sample size should be noted as a potential constraint to this estimation output.

7.2. ARMAX Model

The ARMAX models for Argentina and Ecuador use data starting in 1960. The model assumes an AR(2) process for its dependent variable, the yearly growth of GDP per capita. The exogenous variables are a) the percent change of terms of trade, b) a human-capital index, and c) the percent change of a tail-wind index (TWIN). Additionally, a dummy for the 2001 crisis is included for Argentina. For Ecuador, a dummy control for before and after dollarization is included as well. The model uses data up to 2006 (one year before the populist regimes took office) to estimate its coefficients.

Figure 4. Argentina's GDP per capita and ARMAX model estimation

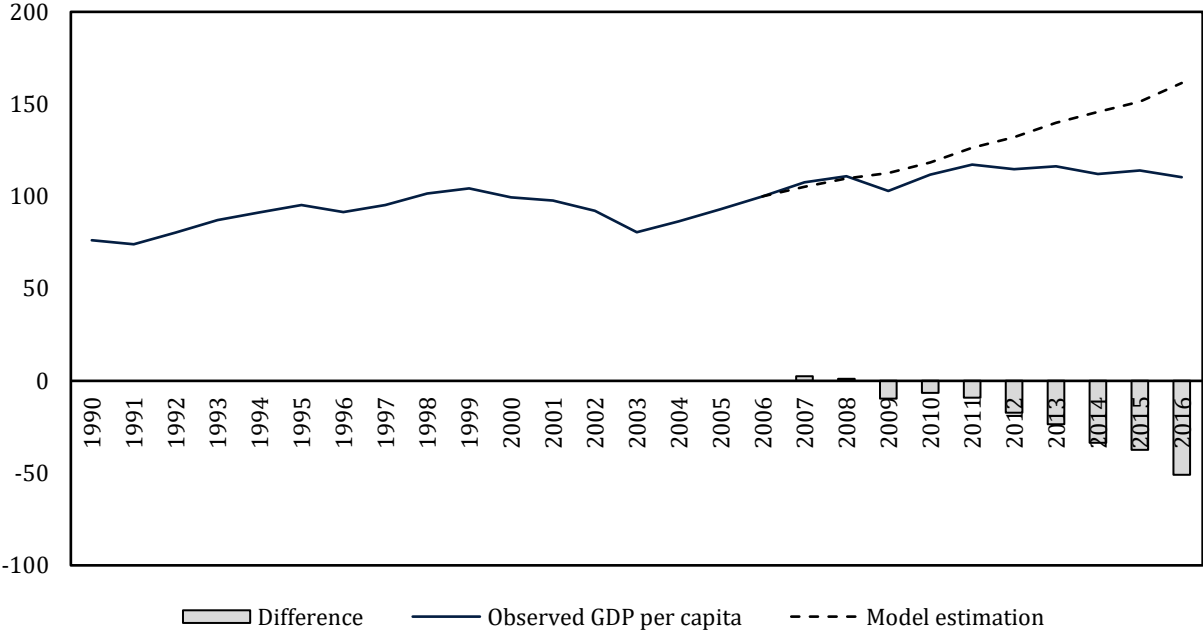
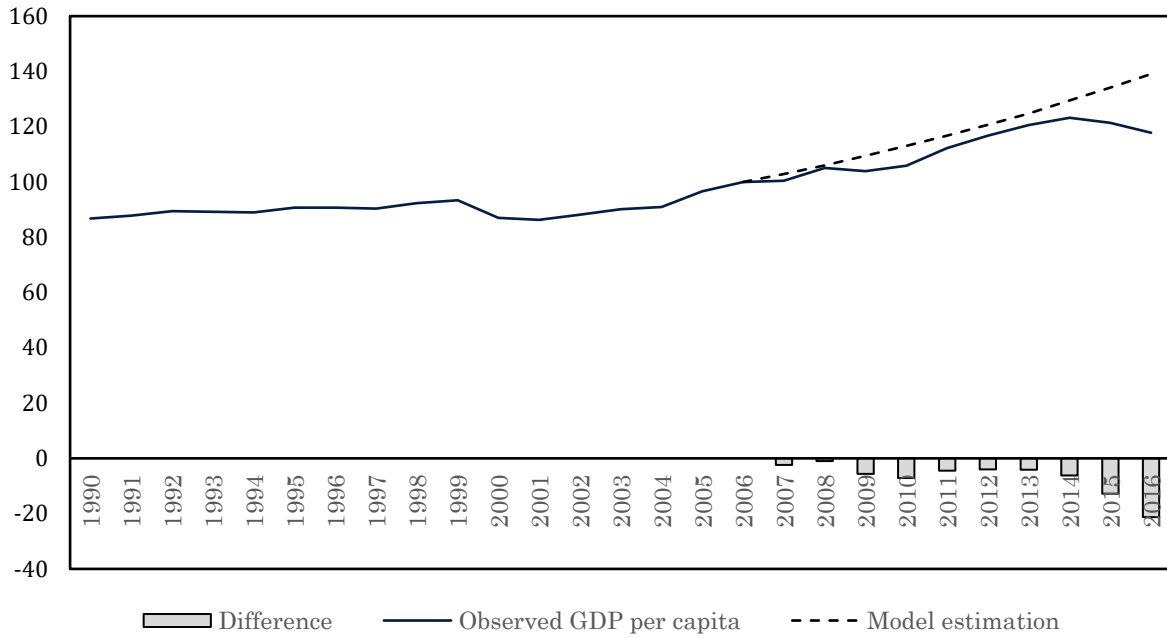


Figure 5. Ecuador's GDP per capita and ARMAX model estimation



In contrast to Argentina, GDP in Ecuador depicts a stronger recovery after the 2008 crisis, with observed GDP approaching pre-Correa trend levels. Argentina, however, never returns to its trend, and the model predicts an increasing divergence year after year. Ecuador's deviation from the model prediction started to increase in 2014.

7.3. VAR Model

The VAR model specification assumes three dependent (endogenous) variables, a) GDP per capita, b) government spending (% of GDP), and c) the inflation rate with a two-month lag. GDP per capita is measured in yearly growth rates, government spending in yearly differences, and the inflation rate in logs (making all variables stationary). The VAR model also includes three exogenous variables, a) the percentage change of terms of trade, b) a human-capital index, and c) the percent change of TWIN. Like the ARMAX model, the VAR uses data up to 2006 (one year before the populist regimes took office) to estimate its coefficients.

Observed growth rate of GDP per capita compared with the model forecast for the populist years (2006 – 2015). The model results are similar to those of the ARMAX model.

Figure 6. Argentina's GDP per capita and VAR model estimation

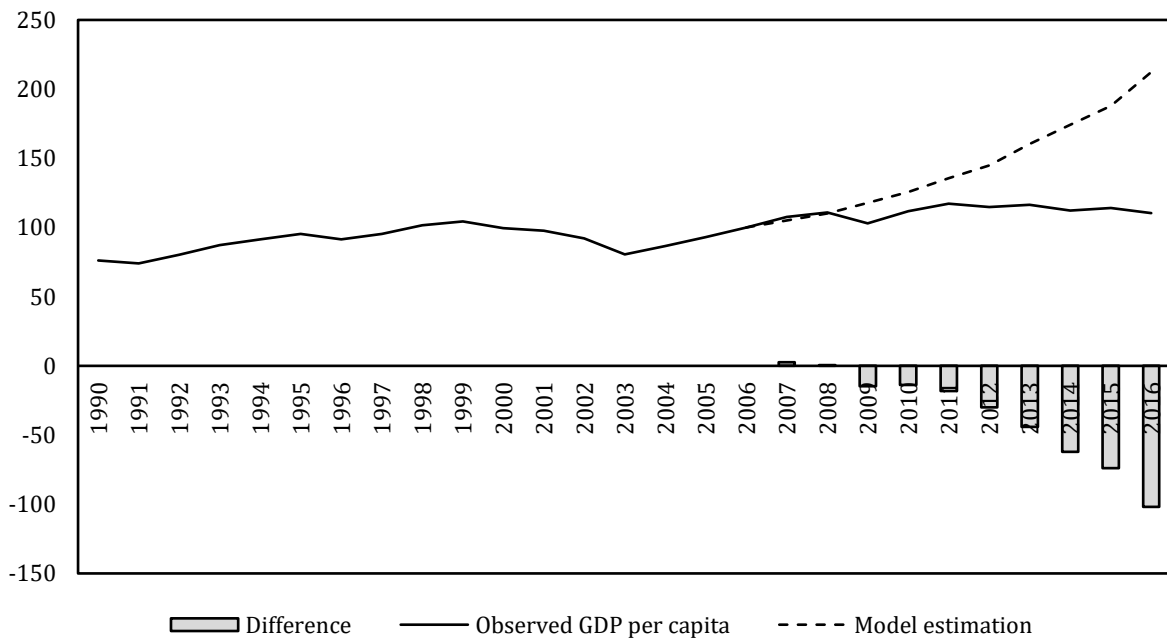
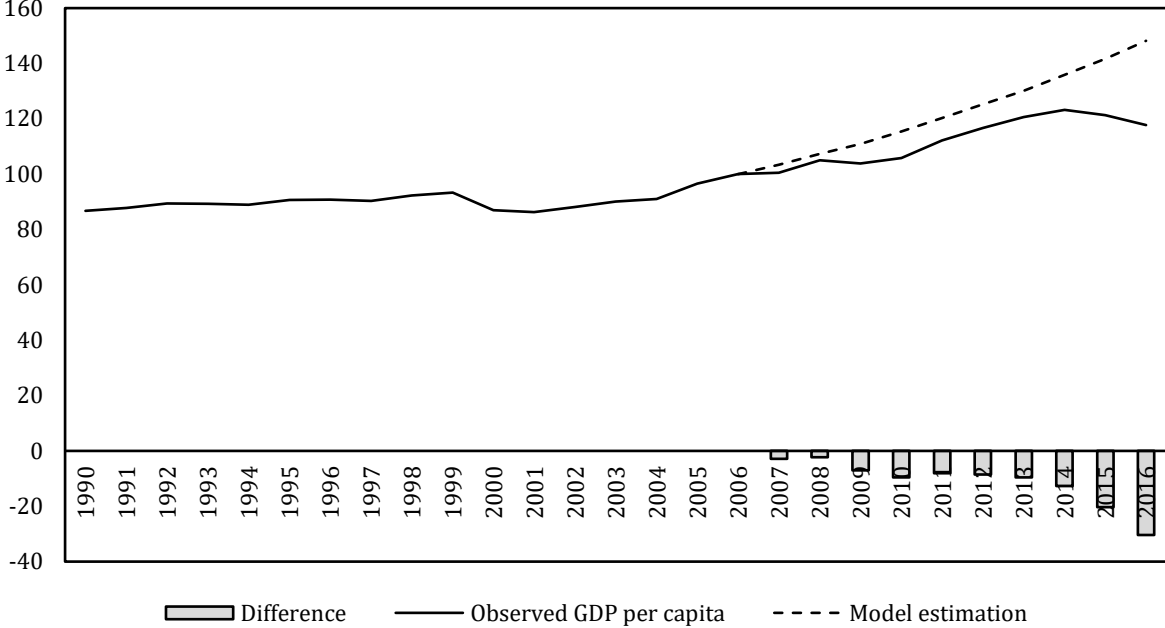


Figure 7. Ecuador's GDP per capita and VAR model estimation



7.4. Synthetic Control

Synthetic control estimation of GDP per capita uses data starting in 1990. Predictor variables are included in Table 12 and Table 13. Our donor pool is similar to that used in other SC studies for Latin America (Absher et al., 2020; Cachanosky et al., forthcoming; Grier & Maynard, 2016; Spruk, 2018) (Table 11). We then compare the growth rate of the observed GDP per capita and the SC estimations.

Table 11. Country weights and RMSPE

Country	Argentina	Ecuador
Brazil		
Canada		
Chile		
Colombia		
Costa Rica		
Guatemala		
Honduras		.075
Indonesia		
Iran		.164
Iraq	.189	
Kuwait	.022	
Mexico		
Nigeria		
Norway	.014	
Panama	.098	
Peru		.052
Paraguay		.534
Saudi Arabia	.148	.004
Uruguay	.529	.170
United States		
Latin America	.627	.756
Non-Latin America	.373	.244
RMSPE	798.37	242.29

Table 12. Predictor balance, Argentina

	Observed	Synthetic
Capital stock per capita	53,299.81	54,175.05
FDI, net inflows (%GDP)	2.44	1.42
Government spending (%GDP)	0.13	0.19
Terms of Trade (%)	0.53	0.30
Merchandise exports (%GDP)	0.11	0.16
Labor share	0.38	0.41
Institutional proxy	0.54	0.51
Inflation (log)	1.60	2.14
Inflation (st. dev.)	56.80	13.69
GDP per capita (1992)	16,264.22	16,364.89
GDP per capita (1995)	17,106.52	16,982.09
GDP per capita (1999)	18,801.30	18,501.58
GDP per capita (2005)	19,140.01	19,413.24

Table 13. Predictor balance, Ecuador

	Observed	Synthetic
Capital stock per capita	44,255.79	35,224.77
FDI, net inflows (%GDP)	1.97	1.35
Government spending (%GDP)	0.20	0.12
Merchandise exports (%GDP)	-0.10	0.26
Labor share	0.14	0.09
HC Index	0.41	0.46
Institutional proxy	0.37	0.34
Inflation (log)	3.03	2.52
Inflation (st. dev.)	13.86	9.14
GDP per capita (1992)	8,283.95	8,148.24
GDP per capita (1994)	8,420.61	8,333.46
GDP per capita (2001)	8,203.65	8,248.61
GDP per capita (2005)	9,336.14	9,473.68

Our results (Figure 8 and Figure 9) are consistent with Absher et al. (2020), in the sense that we find a small negative impact of populism in dollarized Ecuador. However, Absher et al. do not study Argentina, and therefore, we cannot compare our results with their study.

Figure 8. Argentina's synthetic control

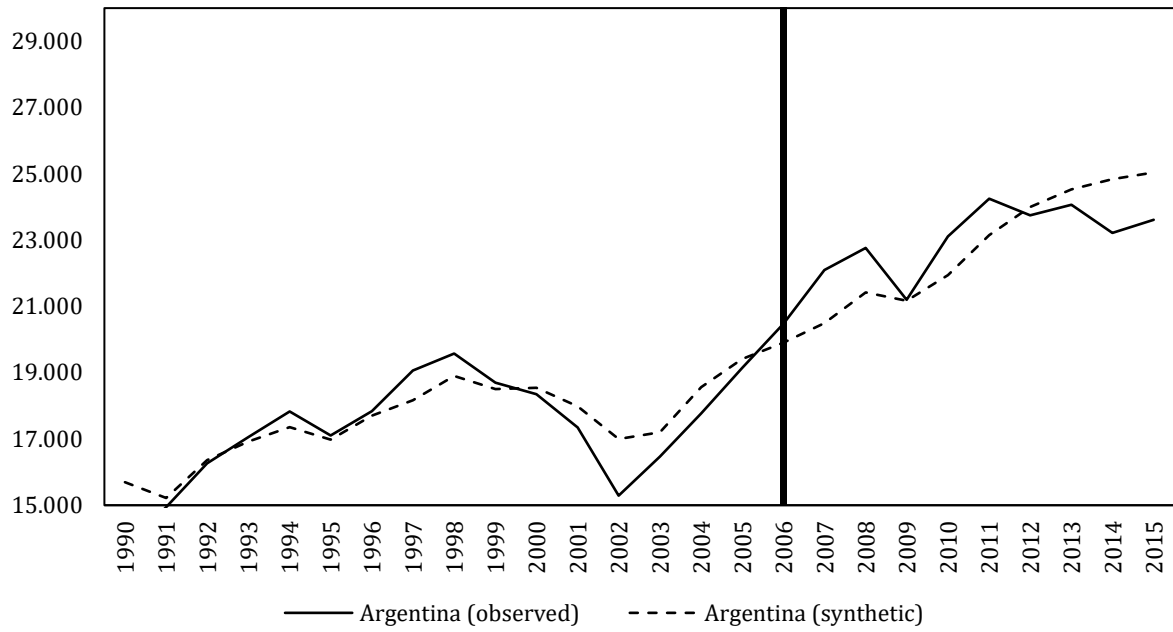
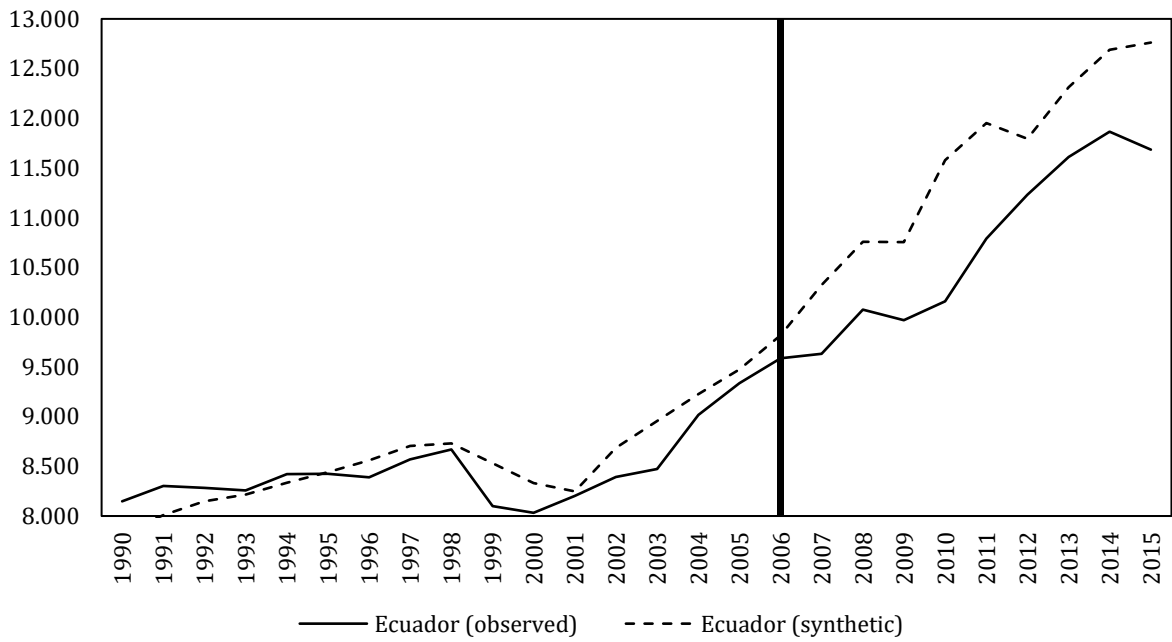


Figure 9. Ecuador's synthetic control



7.5. RBC Model

We consider the standard real business cycle (RBC) model and calibrate it to replicate distinct features of Argentina and Ecuador. The calibrated models are then used to generate impulse response functions (IRFs) that can be compared to assess how the countries differ in their response to adverse productivity shocks of the same initial magnitude.

We consider the planner's problem in the standard RBC model:

$$\begin{aligned} V(k, \theta) &= \max_{c, l, k'} [lnc + \eta l + \beta E\{V(k'\theta')\}] \\ \text{s. t} \\ c + k' - (1 - \delta)k &= \theta k^\alpha (1 - l)^{1-\alpha} \\ \ln\theta' &= \rho \ln\theta + \varepsilon; \varepsilon \sim N(\mu, \sigma) \end{aligned}$$

where the state of the economy is determined by the level of private capital holdings in the current period, k , and the current realization of aggregate productivity, θ . The planner chooses current consumption, c , current leisure, l , and next period capital, k' , to maximize the present discounted value of expected lifetime utility for the represented consumer, which is presented above in recursive form. The planner's only constraint is the aggregate resource constraint as the time constraint has been used to write production in terms of leisure hours. The remaining equation governs the evolution of aggregate productivity, which is assumed to follow an AR(1) process.

To calibrate the model, we need to identify the following parameters: (i) capital's share of income, α ; (ii) the discount rate, β ; (iii) the depreciation rate, δ ; (iv) the utility weight on leisure in the utility function, η ; (v) the persistence of aggregate productivity, ρ ; and (vi) the standard deviation of the innovation in the productivity process, σ .

Following estimates by Kehoe (2003) and Gollin (2002), we set capital's share of income, α , to 0.4 for both countries. The other parameters are allowed to differ based on empirical observation. We set the discount rate, β , to match the risk-free rate in each country¹³ and we calibrate the depreciation rate, δ , by targeting their capital-output ratios.¹⁴ The weight of leisure in the utility function, η is set so the model matches the fraction of non-sleep time devoted to labor.¹⁵ And finally, the parameters of the productivity shock process, ρ and σ , are set so that the model generates an output series with persistence and volatility that is consistent with empirical observation.¹⁶ To obtain usable results, in this case we expand output observation to cover the period Q1-2004 – Q4-2019.

We linearize the model around its steady state and solve it using the method of undetermined coefficients (see Christiano, 2002 for additional details). With the country-specific decision rules in hand, we generate IRFs for both countries assuming an initial adverse shock of the same magnitude. Figure 1 (shown above) presents these IRFs for total factor productivity, output, capital, and consumption. While the initial adverse shock is equal for both countries,

¹³ Using data from Jan-2007 to Dec-2015 we find a risk-free rate of 10.46% for Argentina. And with data from Jan-2007 to Dec-2017 we find a risk-free rate of 10.06% for Ecuador. We drop periods in default to capture representative risk-free rates under non-default conditions.

¹⁴ Using Penn World Table's averages, Argentina and Ecuador's capital-output ratios are 3.38 (2007-2015) and 4.46 (2007-2017) respectively.

¹⁵ Using the same time period, the fraction of non-sleep time devoted for Argentina and Ecuador are 0.30 and 0.29 respectively. As such, the target values for labor in steady state are 0.30 and 0.29 for Argentina and Ecuador, respectively.

¹⁶ For Argentina, the percent volatility and first-order autocorrelation of output is found to be 2.75 and 0.79, respectively. These values for Ecuador are found to be 2.54 and 0.62, respectively. We use quarterly GDP data from United Nation's ECLAC (Economic Commission for Latin America and the Caribbean). We adjust Argentina's data for seasonality.

the productivity shock process recovers more rapidly in Ecuador than in Argentina. We can see similar patterns emerge for the endogenous variables included in the figure. Output recovers far more slowly in Argentina than in Ecuador, while both capital and consumption continue to decline for many quarters after these variables have already started recovering in Ecuador.

While the current model is unable to directly account for the role played by dollarization in mitigating the potential adverse effects of populist policies, the differences observed in the IRFs for both countries are consistent with our earlier results and serve as another point of comparison. The period used to calibrate the model includes periods of significant differences between the two countries in terms of their underlying policy structure (populist vs non-populist and dollarized vs non-dollarized). As such, the differences observed in the two countries' IRFs can be interpreted as reflecting these underlying policy differences within the two countries, as well as other unobserved or unmodeled features.

Additional research, such as the development of a medium-scale DSGE model that includes micro-foundations for both populist policy and a dollarized monetary regime in a small open economy, is needed to say more about the quantitative significance of the mechanism.

7.6. Data Sources

Table 14. Data sources for regression and RBC analysis

Variable	Source
GDP per capita	Penn World Tables
Fertility rate	World Development Indicators
FDI, net inflows (%GDP)	World Development Indicators
Human Capital Index	Penn World Table
Terms of Trade	Penn World Table
Capital stock per capita	Penn World Table
Inflation	World Development Indicators
Institutional variables	V-Dem
TWIN Index	Ocampo (2015a)