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Emilio Ocampo y Nicolás Cachanosky

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Emilio Ocampo and Nicolás Cachanosky¹

Abstract

In this brief note, we evaluate the conclusions of a recent paper by Lopez Almirante and Neumeyer (2024). Simulations of a well-known model calibrated for Ecuador led them to conclude that dollarization can lead to a higher probability of a sovereign default and that only a high inflation rate would make it a welfare enhancing option for a non-dollarized economy. We find data misspecification and erroneous assumptions invalidate the results of the analysis.

Keywords: Dollarization, Default Risk, Latin America.

JEL Codes: E31, E52, E58, F31, F32.

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¹ Professor at Universidad del CEMA (UCEMA) in Buenos Aires and Professor of Economics and Director of the Center for Free Enterprise at The University of Texas at El Paso. We received valuable comments from Aquiles Almansi, Juan Pablo Erráziz and Francisco Zalles. Any mistakes are our sole responsibility. The views expressed herein do not necessarily represent those of Universidad del CEMA (UCEMA), The University of Texas at El Paso or The Center for Free Enterprise at The University of Texas at El Paso.

Dollarization and Default Risk: A Brief Comment

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1. Introduction

At the beginning of the century the dollarization debate was viewed essentially as a tradeoff between policy flexibility and credibility. The traumatic end of Convertibility in early 2002 put this debate to rest among academics and policymakers. A consensus emerged that flexibility was more important than credibility. However, in the last twenty years, Argentina also showed that flexibility in the hands of populist policymakers can lead to disastrous results. Just like in 1999, a presidential promise to dollarize Argentina has rekindled the debate. In parallel, the attractiveness of dollarization has increased hand in hand with the rate of inflation, which last April reached 290% annually. Lopez Almirante and Neumeyer (LA&N, 2024) have a paper that seeks to contribute to the debate. With the help of a small open economy model calibrated for Ecuador they evaluate the impact of dollarization on the incentives of a sovereign to default on its debt.²

LA&N admit dollarization “can have diverse effects on default incentives” (p.18). They conclude that in the short run it increases those incentives, but in the long run it tends to substantially decrease them. When calibrated for Ecuador their model predicts a default in 2003 and another in 2020. The authors also conclude that for heavily indebted

² The comments that follow refer to a version of the paper presented at Finance for Development Lab in June 2024.

countries higher probability of default increases the inflation rate that would make dollarization a welfare enhancing option for a non-dollarized heavily indebted economy such as Argentina. More specifically, “the welfare cost of dollarization in an economy calibrated to Ecuador is equivalent to the welfare cost of permanent inflation of 233%” (p.1).

The starting point of LA&N’s analysis is that immediately after dollarizing, a country needs either a fall in its international reserves (assets) or an increase in its foreign debt (liabilities) to “buy” the entire stock of domestic currency and smooth consumption. The resulting increase in debt in turn leads to an increase in the probability of a sovereign default. When calibrated for Ecuador. LA&N’s model predicts an early post-dollarization default in 2003 and another one in 2020, while a non-dollarized counterfactual only predicts the latter.³

We have several comments on LA&N’s paper. First, a minor point. LA&N provide a cursory review of the literature and do not even mention Berg and Borenstein (2000), Sims (2001), Druck, Moron and Stein (2001), Powell and Sturzenegger (2002), Grandes (2002), Guidotti and Powell (2003) and Uribe (2006) that specifically analyzed the relationship between dollarization and default risk. Second, and more importantly, their model is calibrated with erroneous data and LA&N do not seem to be sufficiently familiarized with the details of Ecuador’s dollarization or the circumstances surrounding its sovereign debt defaults in 2008 and 2020. Third, LA&N’s model is based on several questionable assumptions about the mechanics of dollarization and its predictions do not fit the evidence. Therefore, their conclusions are invalid and not

³ Ecuador had already defaulted its Brady debt in 1999.

useful as a guide for policymakers. Fourth, LA&N do not consider the effect of other factors on the probability of a sovereign default, e.g. pre-existing financial dollarization on the probability of default (Calvo, 2001; Druck, Morón and Stein, 2001). Uribe (2006) argued that monetary policy plays “a significant role in shaping the equilibrium distribution of default and risk premiums.” However, in the case of Ecuador, whose fiscal revenues are highly dependent on oil prices, it doesn’t seem dollarization had first order effects on the likelihood of a sovereign debt default.⁴

A recent study by Carrillo Maldonado, Diaz-Cassou and Flores (2021) found that changes in Ecuador’s country risk premium were mostly explained by external factors, particularly movements in oil prices, conditions in global financial markets and risk premiums for emerging markets.⁵ Domestic variables had a negligible effect. Only public debt was relevant but in a relatively small order of magnitude.

It seems that in the case of Ecuador, the impact of dollarization on the probability of a sovereign default was indirect and dominated by the effect of the commodity cycle and fiscal policy. The causation chain runs from populism to fiscal expansion and from fiscal expansion to an increase in public debt that left the economy vulnerable to random shocks. Only if dollarization can be proven to cause populism one could argue that it increased the probability of a sovereign default in Ecuador.

⁴ In analysis focused on Mexico, Sims (2001) argued that the inability of a government to issue debt in its own currency restricts its inability to confront a random shock. However, he assumed away original sin and pre-existing financial dollarization. Most emerging market economies cannot issue long term debt in their own currency, internationally or domestically a condition that the literature describes as “original sin.”

⁵ This study also found that an increase in broad monetary aggregates reduced Ecuador’s country risk premium (ibid., p.16)

2. Dollarization and Public External Debt

LA&N assume that an official dollarization requires “a large open market operation by which the government buys back the whole stock of national currency using its international reserves or issuing foreign debt (p.1).” This is incorrect. First, official dollarization entails “buying” only the stock of domestic currency in circulation and not total liabilities of the banking system. Second, such transaction takes place gradually in several small individual transactions and not through a “large open market operation.”

LA&N claim that this operation must necessarily be financed “through trade surpluses or foreign debt.” This means that pre-existing dollar balances inside and outside the banking system play no role in their analysis. LA&N also assume that the Ecuadorean banking system, which had substantial offshore assets and operations, was also unable to supply dollars.⁶ The experience of Ecuador contradicts all these assumptions. In economies that have high *de facto* dollarization prior to *de jure* dollarization, pre-existing dollar balances (cash and domestic deposits) play a significant role which is magnified by the banking system through the multiplier. LA&N’s assertions denote lack of understanding of the mechanics of dollarization and the details of its implementation in Ecuador.⁷

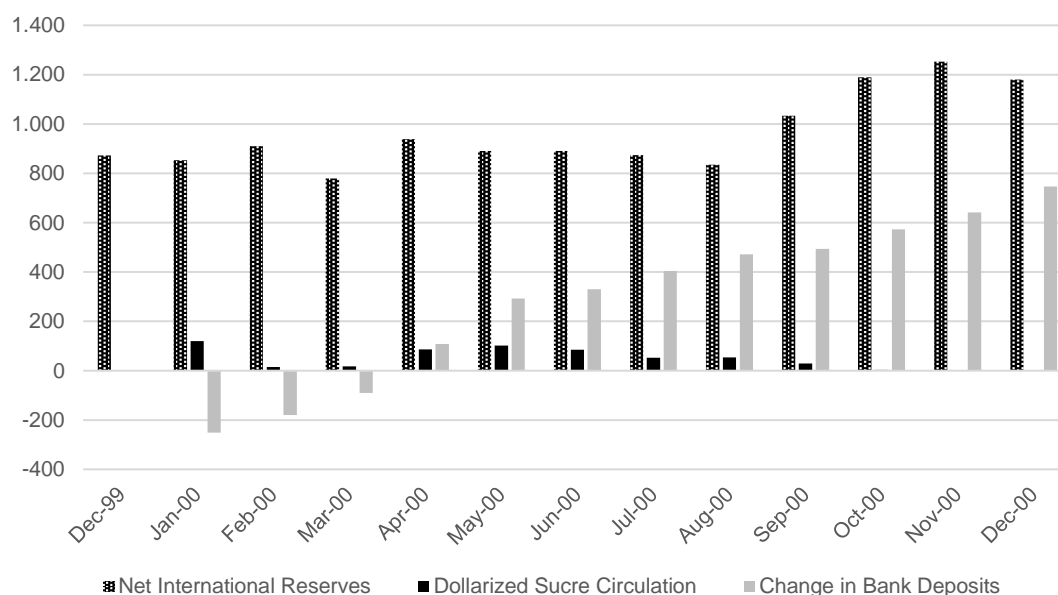
In fact, in the case of Ecuador, official statistics show that four months after the announcement of dollarization only 30% of the pre-existing stock of sucres had been

⁶ Only a mindset dominated by the experience of Argentina since 2002 can reach such conclusion.

⁷ Another common error is to consider dollarization as “a liquidation event” when it is “a going concern event.” There is no need to cancel any liabilities overnight after its announcement.

exchanged for dollars. It took almost nine months to retire all the sucres in circulation. The government didn't incur in any debt or use its foreign reserves to effect this transaction.⁸ In fact, as can be seen in the following chart, dollarization was possible thanks to a substantial increase in bank deposits that, in turn, is explained by remittances from abroad and the “bankarization” of pre-existing dollar cash balances.

Figure 1. Reserves, Sucre Circulation and Increase in Bank Deposits
(in US\$ millions)



Source: Authors based on data published by BCE.

LA&N also claim that if, at the time of dollarization, the nominal exchange rate is not high enough to finance the purchase of a 100% of domestic money supply (including bank deposits), then foreign debt must be issued “to finance the remaining demand of US dollars” (p.13). Therefore, the initial stock of foreign debt in a newly dollarized economy is the difference between cash balances before and after dollarization.

⁸ In the case of El Salvador, the process of dollarization took even longer. After two years only 90% of the *colones* in circulation at the time of dollarization had been converted into dollars.

Therefore, according to LA&N, to implement dollarization, Ecuador must have increased its external debt by an amount equivalent to the change in cash balances (defined as “circulating banknotes among the public and liquid funds at depository institutions”). Moreover, this amount had to be disbursed through a “large open market operation.”

The starting point of LA&N’s analysis of the foreign debt trajectory of a dollarized economy is the following equation:

$$\Delta M = TB + TR + \Delta NFL$$

Where M is US\$ cash balances (defined as “circulating banknotes among the public and liquid funds at depository institutions”, which we assume means the monetary base), TB the trade balance, TR trade remittances net of debt service and NFL net foreign liabilities.⁹ In other words under this framework, a large ΔM implies a large change in foreign public debt or loss of reserves at the central bank.

Underlying this equation is the assumption that, under dollarization, $M = NIR$, therefore $\Delta M = \Delta NIR$. In other words, LA&N assume that under a dollarization regime, the money supply is endogenous to net capital flows. Although theoretically correct, in the case of Ecuador this assumption is not supported by the available official statistics which show that following dollarization ΔM was significantly higher than ΔNIR . In fact, this inconsistency has led several authors to conclude that the money supply was endogenous to domestic economic activity and not to the current account (De la Torre,

⁹ “Liquid funds at depository institutions” could be interpreted as bank reserves or demand deposits. If the former, then M is the monetary base, whereas if the latter, then M is M1.

2011 and 2015; Naranjo Chiriboga, 2015; Vera Lasso and De la Torre Muñoz, 2018; Guncay and Perez, 2019; Villalba, 2019).

It is challenging to empirically verify the hypothesis that in Ecuador the adjustment in the money market is driven by the balance of payments. First, currency in circulation in a dollarized economy is an unknown. The CBE has relied on two approaches to estimate it and they are far from precise. The first is based on the application of the monetary multiplier, while the second one on the amount of dollars that the CBE requires from abroad to meet the liquidity needs of the Ecuadorean economy (see Vera Lasso, 2007). According to two studies, this methodology has led to a significant over-estimation of the currency in circulation and monetary aggregates, particularly after 2014 (Erráez, 2016; Cabezas et al., 2023).

Second, between 2012 and 2017, an exogenous factor came into play that had a decisive influence on the variation of the nominal money supply. The CBE artificially expanded liquidity in a manner that, supposedly, is not feasible under dollarization. A significant portion of the increase in the money supply during this period was deliberately (exogenously) engineered by the central bank to finance persistent fiscal imbalances. “Between 2009 and 2014, some accounting practices and subsequent changes in legislation were adopted that ultimately aimed to allow the CBE to finance the central government’s deficit, challenging standard monetary economic thinking that fiscal dominance are disallowed in a full officially dollarized economy. At its peak, financing of the public sector represented up to 10 percent of GDP (Erráez and Reynaud, 2022, p.22).” The expansion of CBE’s balance sheet violated the budget constraint assumption in LA&N’s model: “In a dollarized regime, the central bank ceases to be the supplier of money. However, the representative household continues to demand real

balances which must now come from either trade surplus or foreign debt” (p.3). More importantly, this balance sheet expansion led to a greater overestimation of the currency in circulation under the methodology used by CBE.

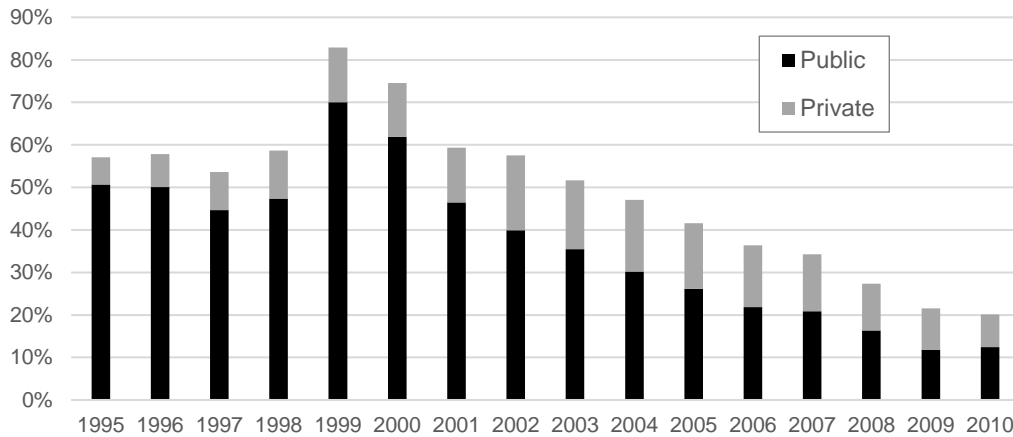
LA&N ignore the above considerations and claim that “the data supports the premise that the Ecuadorian dollarization was associated to the growth of foreign debt and, in turn, on default risk” (p.2). They reach this conclusion by rearranging equation (1) as follows:

$$\Delta \text{NFL} = \Delta \text{M} - \text{TB} - \text{TR}$$

Figure 1 in page 2 of LA&N’s paper shows a cumulative increase in NFL between 2000 and 2003 that adds up to approximately 15% of GDP.

There are several problems with this approach. First, NFL includes non-debt components such as foreign portfolio and direct investments and private external debt. It is hard to argue that an increase in both can lead to a higher risk of a sovereign default. Second, the data contradicts LA&N’s statement. Public debt, domestic and external, fell significantly in the years following dollarization. This was partly the result of the restructuring announced in May 2000 and completed in the following months. Contrary to LA&N’s assertion, public external debt fell by US\$2.3 billion, or a cumulative 35% of GDP, in the period 2000-2003.

Figure 2. Total Public and Private External Debt in % of GDP



Source: Authors based on data from Banco Central del Ecuador.

According to official balance of payments statistics, the increase in NFL between 2000 and 2003 was equivalent to approximately 7.1% of GDP. Most this amount was accounted for almost entirely by Foreign Direct Investment (FDI) and not by an increase in public debt.¹⁰ If what Figure 1 in LA&N purports to show is instead net BOP financing, it also went down significantly in those years (see IMF, 2003, pp.32-33).¹¹ LA&N's prediction of a default in 2003 results from grossly overestimating Δ NFL.

LA&N implicitly assume that all increases in NFL are accounted for by increases in sovereign external debt, that all sovereign debt is homogenous and that a sovereign

¹⁰ The first years after dollarization coincided with the completion of a large private oil pipeline (*Oleoducto de Crudos Pesados*).

¹¹ *But even* in this case, net capital inflows from FDI and portfolio investments cannot increase default risk.

default necessarily involves all outstanding public external debt. This is not true in general and has certainly not been the case in Ecuador since 2000. The only debt that the government defaulted on in 2008 and 2020 was debt owed to private external bondholders, which represented 33% and 35% of the total external debt, respectively, in each of those years.

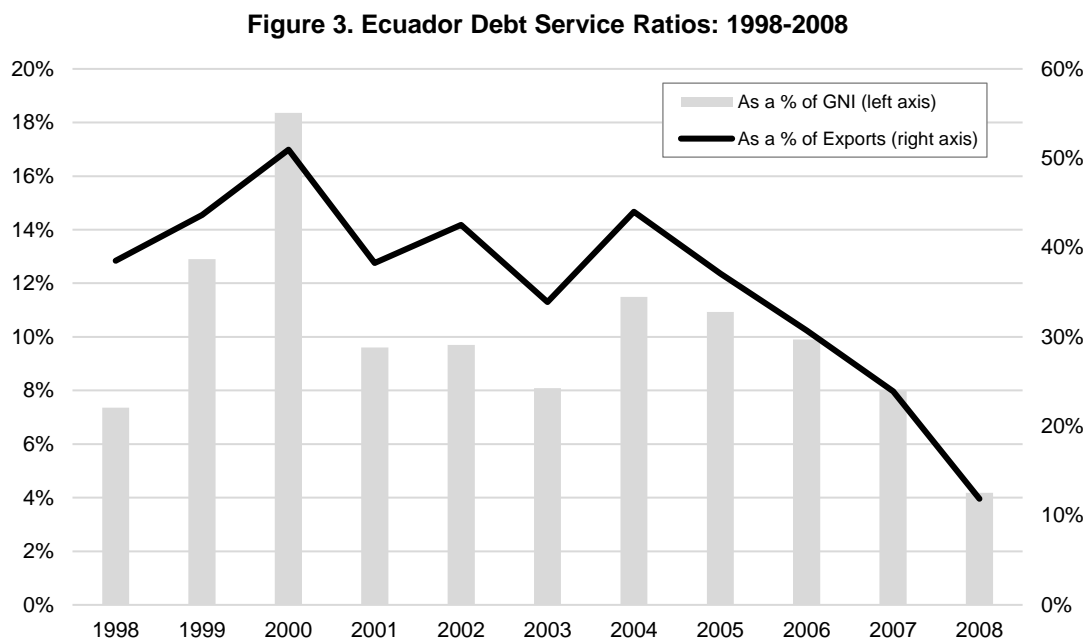
LA&N also implicitly assume that a dollarization induces an immediate contraction in consumption and output which needs to be smoothed out by an increase in foreign debt. “The use of US dollars for consumption smoothing is particularly present in the short run which leads to dollarization increasing default incentives during its early years (p.1).” In fact, dollarization in Ecuador, like Convertibility in Argentina, led to an increase in consumption and output. By 2003, real GDP was 10% higher than in 1999.

3. Predicting Default: Type I, Type II Errors and Misidentification

As already mentioned, Ecuador defaulted twice under dollarization, the first time in December 2008 and the second in May 2020. According to LA&N, their model “accurately captures the 2020 default and predicts another one in the early 2000s but before it actually occurred. One possible explanation for the model anticipating the 2008 default is the lack of long-term debt in the model.” (p.15).

This explanation is incorrect. The prediction of a default in 2003 is a Type I Error that results from overestimating Ecuador’s external debt. The 2008 default cannot be considered its delayed materialization because it was selective, completely opportunistic and not driven by financial considerations or the need to smooth out consumption. First, it included only two out of three outstanding global bonds (Correa did not default on the bond issued during his tenure as Economy Minister). Second, as

Buchheit and Gulati (2009) explain, “the motivation for this default [Ecuador in 2008] was domestic politics, not financial necessity. It was the first time in modern history that a sovereign debtor had demanded that its external commercial creditors write off most of their claims (65 percent, as it turned out), without advancing a plausible argument that financial distress warranted such extraordinary debt relief.” Porzecanski (2010) also noted that “there was no objective basis” for Ecuador’s default in 2008 since “the public external debt was the least burdensome it had been in over three decades, relative to government revenues or to the gross domestic product (p.256).”



Source: Authors based on World Development Indicators.

Far from the benevolent government imagined by Arellano (2008), which provides the theoretical basis for LA&N’s model, Correa sought to take advantage of the turmoil

created by the global financial crisis and the collapse of Lehman Brothers.¹² [On 12 December 2008](#), he declared a selective default on two global bonds claiming they were an “immoral and illegitimate debt.”¹³ As the price of the defaulted bonds dropped in the secondary market, Ecuador began repurchasing them surreptitiously through government related financial intermediaries. Six months later Correa announced a cash repurchase of the defaulted bonds. In other words, Ecuador’s 2008 default was not endogenous result of their model or a delayed manifestation of the 2003 default. LA&N’s model could have only predicted it, if it had predicted the simultaneous occurrence of a left wing-populist regime in Ecuador and a global financial crisis.

With respect to the 2020 default, LA&N’s analysis is also flawed since it ignores the legacy of a decade long populist fiscal regime and of the COVID crisis, which hit Ecuador particularly hard. Populism is absent from the analysis but is the key factor that explains the increase in public expenditures, fiscal deficits and sovereign external debt that inevitably led to this default. Again, unless LA&N’s model can accurately predict that dollarization increases the probability of a random shock such as COVID or a populist regime such as Correa’s, the prediction of a higher probability of a sovereign default in 2020 does not make sense. In any event, the model also predicts a default in 2020 for the non-dollarized counterfactual.

¹² A benevolent government “uses international borrowing to smooth consumption and alter its time path” (Arellano 2008, p.693). It could be argued that the fall in oil prices at the end of 2008 forced Correa’s hand. However, this fall came at the end of an abrupt rise in the first ten months of the year. In less than a year they stabilized at 2007 levels. Also, Ecuador had accumulated three years of current account surpluses and, at 41%, total public and private external debt to GNI was at its lowest level since 1982.

¹³ There was a technical default, later cured, on a third global bond due in 2015 that had been issued in 2007 while Correa was Finance Minister.

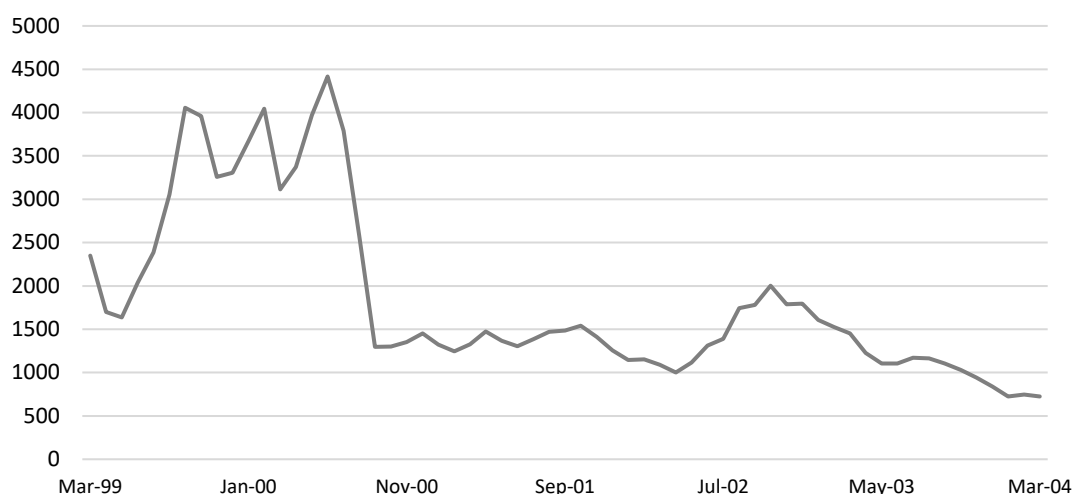
Correa's opportunistic default in 2008 and his populist policies increased the risk of Ecuador's 2020 sovereign default in two ways. First, by significantly expanding public expenditures and the role of the public sector they contributed to a decline in productivity and GDP growth (IMF, 2019, p.4). Secondly, Correa's aversion to foreign capital discouraged FDI and private portfolio investments, with the same result.

Fed with erroneous data, LA&N's model incorrectly predicted a default that never occurred in 2003, failed to predict one that occurred in 2008 and accurately predicted a default that would have happened without dollarization in 2020. A superficial interpretation of the facts led LA&N to try to rationalize these predictions.¹⁴

There is another problem with LA&N's analysis. With rational expectations, a higher probability of a sovereign default should translate into a higher observed country risk premium (CRP). LA&N model predicts "a default shortly after dollarization in 2003 (p.15)." However, as can be seen from the chart below, Ecuador's CRP declined significantly in the years following dollarization, particularly after August 2000, when an agreement with private bondholders ended the 1999 default.

¹⁴ A more detailed analysis of the Ecuadorean case suggests that Correa's policies not only contributed to two sovereign debt defaults but also undermined the financial integrity of dollarization by degrading the quality of inside money.

Figure 4. Ecuador: Country Risk Premium as measured by EMBI+ (in basis points)



Source: J.P. Morgan

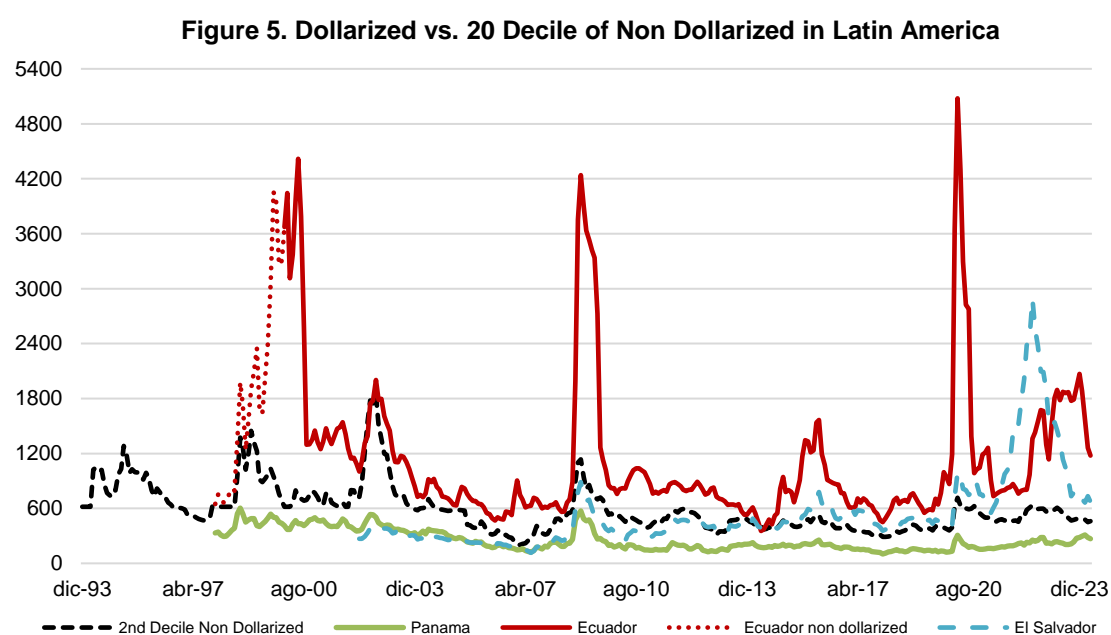
LA&N's analysis implicitly assume bondholders were naïve and couldn't properly evaluate the risk of default under dollarization.

Even with a properly calibrated model, testing whether, *ceteris paribus*, dollarization increases the risk of a sovereign debt default is challenging, given that: a) the number of dollarized economies compared to non-dollarized is relatively small, b) there is only one dollarized economy that has defaulted on its external debt (Ecuador), and c) the probability of a sovereign default is influenced by a much broader set of factors than just the currency regime. The list of such factors includes, among others, the existing fiscal regime, prevailing liability dollarization, whether populism is endemic, the presence of institutional and/or cultural incentives to fiscal profligacy, whether the central bank survives after dollarization, the degrees of financial integration and crowding out in the banking system.

Ecuador is special case. In the last quarter of a century, it defaulted three times: the first before dollarization (1999), the second under dollarization but not to smooth out

consumption but for purely opportunistic reasons (2007), and the third, when the Covid crisis hit an economy already burdened by ten years of fiscal profligacy and low growth.

As shown by the following chart, a simple analysis of country risk premiums in Latin America does not allow for definitive conclusions about the relationship between dollarization and the risk of sovereign default. Ecuador defaulted the year before dollarization and only reached an agreement to restructure its debt by mid-2000, its CRP was high in the first year after dollarization but then it declined gradually. Between 2001 and 2019 the CRP of El Salvador and Panama, were lower than for 80% of the non-dollarized Latin American economies.¹⁵



Source: Authors based on data by J.P. Morgan.

In a recent study of seven Latin American countries during the period 2001-2009, Del Cristo and Gomez-Puig (2017) found that international factors had more influence over

¹⁵ Interestingly, in El Salvador external public debt increased significantly in the first three years after dollarization but there was no default and until 2019 CRP was relatively low.

CRP than domestic factors and that in dollarized countries CRP were more stable and had a weaker influence on economic activity than in non-dollarized ones, “suggesting that investors’ confidence might be higher in dollarized countries where real and financial economic evolution are less vulnerable to external shocks than in non-dollarized ones (p.29).”

More troubling than these failed predictions, is that LA&N concluded that the simulations of their flawed model support the hypothesis that “the welfare cost of dollarization in an economy calibrated to Ecuador is equivalent to the welfare cost of permanent inflation of 233%.” This implicitly suggests that Ecuadoreans are as bad off with dollarization as Argentines are with their own debased currency. Such conclusion would surprise anyone familiarized with the social and economic condition in both countries in the last two decades.

4. Conclusions

LA&N raise an important issue in the dollarization debate. As the existing literature suggests, there are valid theoretical arguments to conclude dollarization could lead to a decrease in the risk of a sovereign default and equally valid arguments to reach the opposite conclusion. Given a particular currency regime, several factors besides the currency regime have a first-degree effect on a country’s probability of default, such as the dependence of fiscal revenues on commodity prices, the presence of original sin and existing liability dollarization.

Ecuador’s defaults in 2008 and 2010 do not make a good case to prove the hypothesis that dollarization increased the risk of default. The dependence of fiscal sustainability on oil revenues is orthogonal to the currency regime (however, post-dollarization

Ecuador's exports became more diversified). Populism rather than dollarization is a key factor behind Ecuador's sovereign defaults since 2000 but is absent from LA&N's analysis.

We find that LA&N's analysis of Ecuador's risk of default is based on an erroneous assumption, *viz.* a significant increase in public debt after dollarization. Consequently, their model yields inaccurate predictions. The proposed welfare analysis defies common sense and should have given pause to the authors. To sum up, the paper makes a weak case to prove LA&N's hypothesis and does not present conclusive theoretical or empirical arguments to settle the debate. LA&N's reductionist approach leads to invalid conclusions that offer limited guidance to policymakers.

5. References

- Arellano, C. (2008). "Default Risk and Income Fluctuations in Emerging Economies," *American Economic Review*, 98 (3), pp. 690–712.
- Berg, A. y Borensztein, E. (2000) "The Dollarization Debate", *Finance & Development*, (March), pp.38-41.
- Bucheit, L. C. and Gulati, G.M. (2009) "The Coroner's Inquest: Ecuador's Default and Sovereign Bond Documentation," *International Financial Law Review*, Vol.29, No.9, pp. 22-25.
- Cabezas, E., F. Navarro, D. Pérez and G. Torres (2023). "Estimación de las especies monetarias en circulación para una economía dolarizada: el caso de Ecuador," IDB Publications (Working Papers) 13164, Inter-American Development Bank.
- Carrillo Maldonado, P.; J. Diaz-Cassou and M. Flores (2021). "What are the Main Variables that Influence the Dynamics of Ecuador's Sovereign Risk?", Ecuadorean Political Economy Lab (EPEL) Working Paper.
- Del Cristo, M.L.M. and Gómez Puig, M. (2017) "Dollarization and the relationship between EMBI and fundamentals in Latin American Countries", *Cuadernos de Economía*, No.40, pp.14-30.
- De la Torre Muñoz, C.A. (2011) "Mitos y lecciones de la dolarización. El caso ecuatoriano, once años después," *Revista Realidad* 128, pp.195-207.
- _____ (2015) "Inaplicabilidad del "enfoque monetario" de la balanza de pagos en una economía dolarizada," XII Jornadas Internacionales de Política Económica en la Universidad Castilla La Mancha, Toledo, España, 29 de mayo de 2015.

Druck, P., Morón, E. and Stein, E. (2001). “The Twin Risks in the Dollarization Debate: Country and Devaluation Risks,” CEMA Working Papers: Serie Documentos de Trabajo No. 198, Universidad del CEMA.

Erráez, J.P. (2016). “Las especies monetarias en circulación en Ecuador”, *Coyuntura Económica*, pp.4-7.

Erráez, J.P. and Reynaud, J. (2022) “Central Bank Balance Sheet Expansion in a Dollarized Economy: The Case of Ecuador”, IMF Working Paper WP/22/234 (December).

Fischer, S. (1993) “Seigniorage and Official Dollarization, ” pp. 6-9, in Liviatan, N. (Ed.) *Proceedings of a Conference on Currency Substitution and Currency Boards*, World Bank Discussion Papers. Washington, D.C.: The World Bank.

_____ (2000) “Ecuador and the IMF,” Address at Hoover Institution, May 19, 2000, available at <https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp051900>

_____ (2001) “Exchange Rate Regimes: Is the Bipolar View Correct?”, *Journal of Economic Perspectives*, Volume 15, Number 2 (Spring), pp. 3–24.

Grandes, M. (2002) “Can Dollarisation Cope with External and Fiscal Vulnerability?”, *Journal of Emerging Market Finance*, 1:1 (May), pp. 47-73

Guidotti, P.E. and Powell, A. (2003) “The Dollarization Debate in Argentina and Latin America”, pp.175-220, in Auernheimer, L.(Ed.) *International Financial Markets: The Challenge of Globalization*. Chicago: The University of Chicago Press.

Guncay, C. y Pérez, D. (2019) “Endogeneidad de la oferta monetaria en Ecuador: Un análisis desde la visión Post-keynesiana”, *Cuestiones Económicas*, Vol.29, No.1, pp.75-114.

IMF (2001) *Annual report on exchange arrangements and exchange restrictions 2000*. Washington, D.C.: International Monetary Fund.

_____ (2003) *Ecuador: 2003 Article IV Consultation, Request for a Stand-By Arrangement, and Approval of an Exchange Restriction - Staff Report*, IMF Country Report No. 03/90. Washington, D.C.: International Monetary Fund.

_____ (2006) *Ecuador: 2005 Article IV Consultation—Staff Report*, IMF Country Report No. 06/98 (March). Washington, D.C.: International Monetary Fund.

_____ (2019) *Ecuador: Selected Issues and Analytical Notes*, IMF Country Report No. 19/80 (March). Washington, D.C.: International Monetary Fund.

_____ (2023). *Panama. Selected Issues*. Washington, D.C.: International Monetary Fund.

López Almirante, J.S. y Neumeyer, P. A. (2024) “A Welfare Analysis of Dollarization”, presented at Finance for Development Lab. Available at <https://findevlab.org/debtcon7/debtcon-parallel-sessions-day-3/>

Mundell, R.A. (2000) “Currency Areas, Exchange Rate Systems and International Monetary Reform,” *Journal of Applied Economics*, Vol. 3, No. 2 (November), pp. 217-256.

- Naranjo Chiriboga, N. (2015) “Dinero endógeno y Dolarización Oficial en el Ecuador, 2000-2015,”
- Ocampo, E. and Cachanosky, N. (2023) *Dolarización: Una solución para la Argentina*. Buenos Aires: Editorial Claridad.
- Powell, A. and Sturzenegger, F. (2002) “Dollarization : The Link between Devaluation and Default Risk,” in Levy-Yeyati, E. and Sturzenegger, F. (Eds.) *Dollarization: Debates and Policy Alternatives*. Cambridge, Massachussets: The MIT Press.
- Porzecanski, A. (2010) “When Bad Things Happen to Good Sovereign Debt Contracts: The Case of Ecuador,” *Law and Contemporary Problems*, Vol.73:251 (September), pp.251-271.
- Sims, C. (2001). “Fiscal consequences for Mexico adopting the dollar,” *Journal of Money, Credit and Banking*, Vol. 33, No. 2, pp. 597-616.
- Uribe, M. (2006). “A fiscal theory of sovereign risk,” *Journal of Monetary Economics*, 53: pp. 1857–1875
- Vera Lasso, W. (2007). “Medición del Circulante en Dolarización: Ecuador 2000-2007.” *Cuestiones Económicas*, 23, nro.2-2-3: pp.133-161.
- Vera Lasso, W., & De la Torre Muñoz, C. (2018). “El Dinero de Alto Poder En Una Economía Dolarizada,” *Cuestiones Económicas*, 28(2).
- Villalba, M. (2019) “Dos décadas de dolarización ¿qué hemos aprendido sobre este esquema monetario?”, pp.7-42, en Villalba, M. (Ed.) *Dolarización: dos décadas después*. Quito : Consorcio de Gobiernos Autónomos Provinciales del Ecuador - CONGOPE : Ediciones Abya Yala : Incidencia Pública del Ecuador : El Instituto de Trabajo y Economía – ITE. 2019.