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Forcible Currency Conversions: 1982-2015

Carmen M. Reinhart
Harvard University

Contrary to the intent of the designers of what was to be an irreversible currency union, Greece may well exit the euro area. Whether default triggers the introduction of a new currency (or re-activation of an old one) is not inevitable. However, if “de-euroization” is the end-game, then a forcible (or compulsory) currency conversion is likely to be a central part of that process, along with more broad-based capital controls. I review the historical record of past conversions.

Abandoning a pegged exchange rate or violating an exchange rate band is not a black-swan event. Over the sweep of history, governments have reneged on their exchange rate commitments fairly regularly. Exits from hard pegs, such as those associated with the gold standard of an earlier era, are less frequent and possibly associated with a higher reputational cost. Transitioning from one currency to another (a shift in what constitutes legal tender) is less frequent still, but not unheard of, as many newly-formed nation states supplanted the currency of their colonizer with one of their own.¹ Apart from these transitions in the context of nation building, there are comparatively fewer cases of full-fledged currency conversions.

Many of the modern currency transitions were associated with either the creation of the euro or with unilateral decisions by nations who wanted to adopt someone else’s currency *de jure* as their sole legal tender. In those instances, the euro and US dollar emerged as the anchor currencies of choice. Examples of the former include Malta (2008), and Lithuania (2015), while Panama (1904) and Ecuador (1999) illustrate the latter. Since it was founded in 1847, Liberia relied on the United States dollar as its legal tender almost exclusively. Long civil wars and its associated fiscal toll, however, necessitated the creation of its own currency. Because this transition occurred over the course of a very protracted and often chaotic conflict, it does not offer a particularly instructive road map as to what to expect if Greece was to exit the euro.

There is, however, a much longer list of countries that (for a variety of reasons) ended up highly dollarized (or euroized) *de facto*. In these countries, despite the existence of a domestic currency, a significant share of bank deposits and loans are denominated in a foreign currency. US dollars or euros are widely accepted for payment and everyday transactions; often larger ticket items (such as housing) is priced in the foreign currency. A number of these countries have tried to “undo” this dollarization. Their approach has ranged from the gradualist and “market friendly” to more abrupt forcible conversions—usually in

¹ Rose (2007) tracked exits from currency unions over the post-World-War II period, which averaged about one per year in his sample and are often associated with newly won independence.

the midst of economic crisis. The economic outcomes of these de-dollarization efforts have also varied over both the short and medium term.

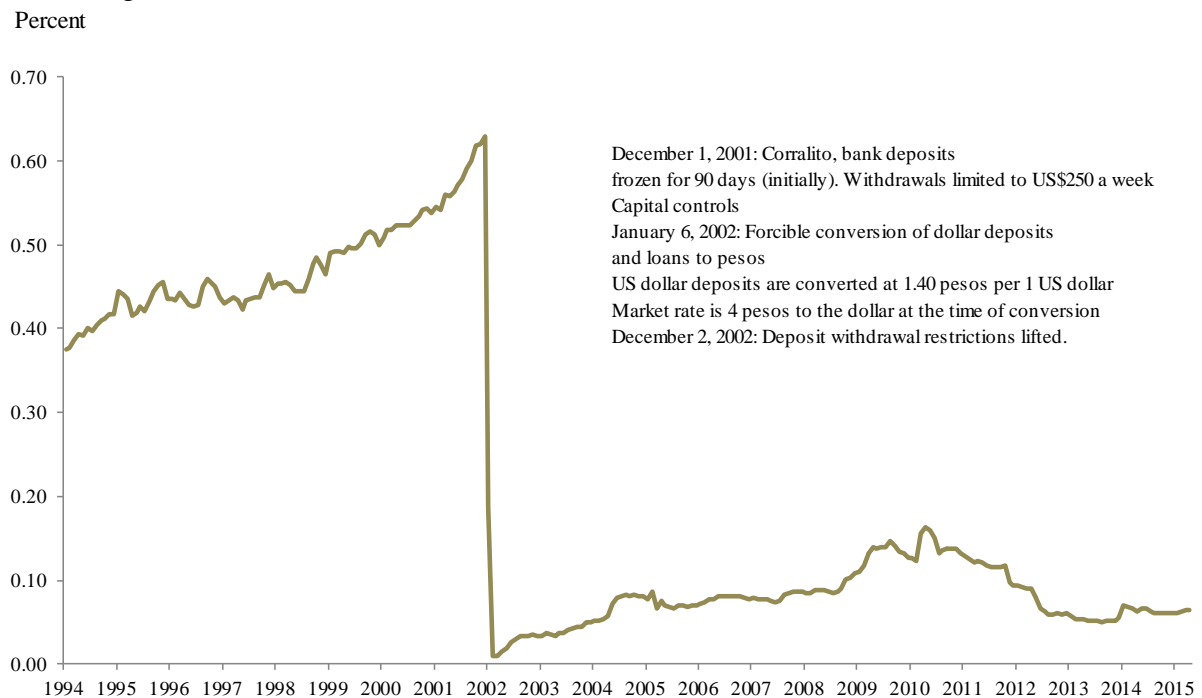
Undoing Domestic “Dollarization”

To identify those cases where the reversal of deposit dollarization was large and lasting, Reinhart, Rogoff, and Savastano (2014) searched for all those episodes where the ratio of foreign currency deposits to broad money satisfied the following three conditions: The ratio (a) experienced a decline of at least 20 percentage points; (b) settled at a level below 20 percent immediately following the decline; and (c) remained below 20 percent until the end of the sample period.

Only four of the eighty-five countries with data on foreign currency deposits met the three criteria during the period 1980-2001: Israel, Mexico, Pakistan and Poland. Argentina post-2002 is the fifth case (Figure 1).

Bottom line—de-dollarization is rare.

Figure 1. Foreign Currency Deposits as a Share of Broad Money
Argentina’s December 2001- December 2002 Corralito and Forcible Conversion



Source: Banco Central de la Argentina.

Notes: When the deposits were converted at the rate of 1.4 pesos per 1 US dollar, the black market exchange rates (there were more than one at this time) were in the 2+ pesos to 1 US dollar range. Thus there is a haircut for depositors.

Israel and Poland both in the more gradual and market friendly approach appear as the only two cases on record of large and lasting reversals of deposit dollarization that had minimal side effects on financial intermediation, output losses, and capital flight.² In both cases the de-dollarization started almost at the same time as the authorities embarked on a (eventually successful) disinflation program centered around a strong exchange rate anchor, and the domestic financial system offered assets with alternative forms of indexation (Israel) or very high real interest rates (Poland). De dollarization in these gradualist experiences took place as the countries *exited* from economic crisis--this feature also limits their relevance to the challenges now facing Greece.

There are five episodes over 1982-2002 where forcible conversion of foreign currency deposits and loans into local currency in domestic banks takes place amid deep economic crises. These de-dollarization measures were introduced alongside capital and exchange controls, default on external debts and internal arrears, deposit freezes and, in some cases bank holidays and nationalization. These episodes include (in reverse chronological order): Argentina, January 2002; Argentina December 1989; Peru, July 1985; Bolivia, November 1982; and Mexico, August 1982.³

We document selective indicators (capital flight, parallel market premia, real per capita GDP growth, and bank deposits as a share of GDP to assess the state of financial intermediation) around the time the measures are implemented. To be clear, the analysis is descriptive and does not directly assess the impact of the measures per se on the economy. The endogeneity of capital controls (to which these conversion measures are intimately related) is recognized in much of the literature (see Drazen and Bartolini, 1997, Cardoso and Goldfajn, 1998, and Reinhart and Rogoff, 2004). The exercise is informative on the various questions regarding the duration of the measures.

The episodes:

Table 1 presents estimates of capital flight (as a share of GDP) in the year of the conversion and the years before and after.⁴ As noted, the compulsory conversion of foreign currency deposits into local currency is prompted by the rapidly deteriorating economic environment. Capital flight with or without bank runs, was a catalyst to governments and

² In Israel, in late 1985, the authorities introduced a one-year mandatory holding period for all deposits in foreign currency, making those deposits substantially less attractive than other indexed financial instruments—see Bufman and Leiderman (1992).

³ In 1999 (during a year-long external debt restructuring), Pakistan froze foreign currency deposits—but this was less draconian than the conversions listed here and, thus, not included (see Reinhart, Rogoff, and Savastano, 2013 for details).

⁴ Capital flight is estimated as the sum of net private capital inflows plus net errors and omissions in the balance of payments accounts. These are, on the whole lower-bound estimates, as they do not factor in misinvoicing of trade. Estimates of export under-invoicing and import over-invoicing add significantly to the figures reported here during these periods.

central banks who neither have the hard currency on hand to meet the escalating withdrawals nor have the ability to print dollars themselves. Capital flight, especially when compared to

Table 1. Episodes of Involuntary Conversion: Capital Flight Estimates, Parallel Market Premia and Capital Controls

| Country and date of conversion | Estimates of capital flight (as a percent of GDP) | | | Parallel market premia peak and date | Comments: |
|---|---|-----------------|-------------|--------------------------------------|---|
| | Year before | Conversion year | Year after | | |
| Argentina, January 6, 2002 ¹ | 2.9 | 6.0 | 12.0 (peak) | 186.0, 2002 | Capital controls and the deposit freeze were introduced December 1, 2001—capital controls remain in place to date. |
| Argentina, December 28, 1989 | 0.5 | 7.8 (peak) | 2.8 | 259.6 March 1989 | BONEX plan more than halved the liquid stock of financial assets by converting seven-day time deposits into ten year bonds. Controls were already in place at the time; these lasted through March 1991, when the convertibility plan was introduced. |
| Bolivia, November 1982 ² | 7.6 | 4.5 | 1.5 | 532.7, August, 1982 | Foreign currency deposits were first allowed in 1973; they were re-introduced in 1985 when capital controls were lifted. |
| Mexico, September 1, 1982 ³ | 0.1 | 2.5 | 0.7 | 100.1 December, 1982 | Foreign currency deposits were first allowed in 1977. They were re-introduced at the end of 1985 to stem capital flight. Capital controls remained in place until 1987. |
| Peru, July 1985 | 2.0 | 4.5 | 9.7 | 54.2, October 1985 | Foreign currency deposits were first allowed in 1978; they were reintroduced in 1988 (after the July 1985 ban). Capital controls remained in place until 1990. |

Sources: International Monetary Fund, *Balance of Payments Statistics* and *International Financial Statistics*, *Pick's World Currency Report*, various issues, Chang, Claessens, and Cumby (1997), Savastano (1996), and Reinhart (2004), Reinhart and Rogoff (2004).

Notes: Capital flight is estimated as the sum of net private capital inflows plus net errors and omissions in the balance of payments accounts. These are, on the whole lower bound estimates, as they do not factor in miss-invoicing of trade. Estimates of export under-invoicing and import over-invoicing add significantly to the figures reported here during these periods.

¹ Since the conversion occurs at the very start of the year (and the deposit freeze had already been in effect since December 2001, we treat 2001 as the year of the conversion and 2002 as the year after.

² This measure of capital flight is estimated to have reached a peak of 13.4 percent of GDP in 1980.

³ As this measure does not fully capture the external US dollar deposits of residents, it severely under-estimates Mexican capital flight. According to a US General Accounting Office (1997) study, these deposit withdrawals brought the foreign exchange clearing system “to the edge of a breakdown.”

tranquil periods (not shown here) is exceptionally high during these episodes as well as immediately before, and after. It is also evident from Table 1, that it is difficult to conclude that the conversions (and the capital controls that accompanied these) were especially successful in stopping the leakage.⁵ The leakages were in part driven by expectations of future exchange rate instability, as evidenced in the next to last column of Table 1, that shows the peaks in the parallel market premia during the conversion window.

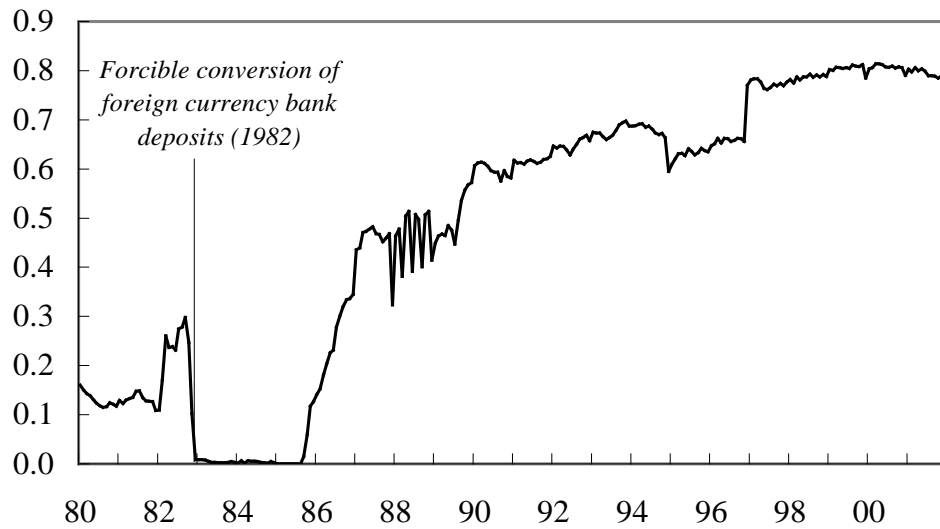
Two further observations on the final column of Table 1. (i) The capital and exchange controls were in place for an extended period of time-usually longer than what was initially announced; (ii) Because of the persistence of capital flight and the revealed preference of domestic residents to hold their savings in assets other than domestic currency bank deposits, foreign currency deposits were re-allowed by the authorities (reversing their earlier decision to de-dollarize) in all five episodes. Figure 2, illustrates the policy reversal in the cases of Bolivia and Peru.

⁵ As we do not observe the counterfactual, this is a tentative interpretation.

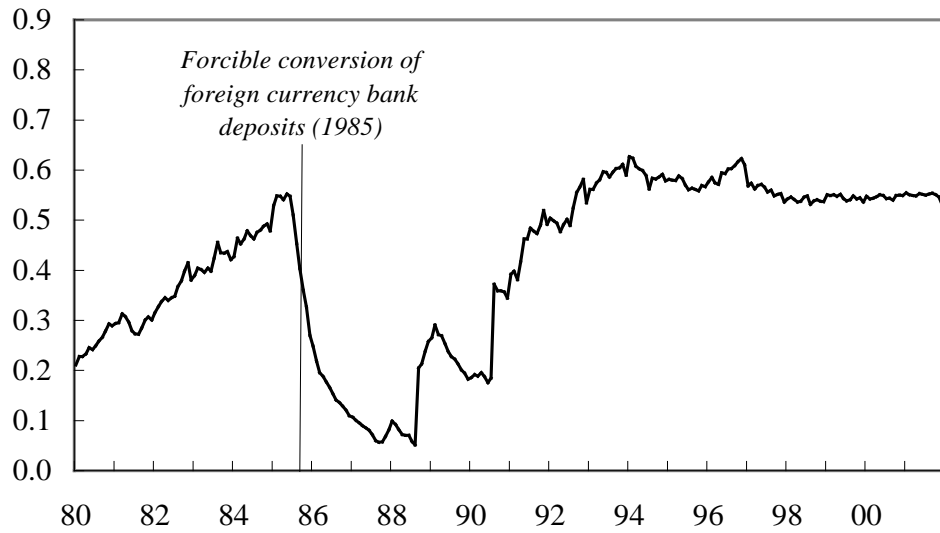
Figure 2

Failed de-dollarization attempts

Bolivia



Peru



Source: See Appendix I.

1/ Solid line depicts the share of foreign currency bank deposits in broad money.

To reiterate, not all the countries that introduced severe restrictions on the availability of dollar deposits managed to lower the deposit-dollarization ratio on a sustained basis. Bolivia and Peru adopted measures similar to those of Mexico in the early 1980s but, after some years of extreme macroeconomic instability that took them to the brink of hyperinflation, both countries eventually reallocated foreign currency deposits, and have since remained highly dollarized despite their remarkable success in reducing inflation —see Figure 2.

Even in the countries where the restrictions on dollar deposits have, thus far, led to a lasting decline of deposit dollarization the costs from de-dollarization were far from trivial. In Mexico, capital flight nearly doubled and bank credit to the private sector fell by almost one-half in the two years that followed the forced conversion of dollar deposits, and the inflation and growth performance remained dismal for several years (see Dornbusch and Werner, 1994).⁶

Growth, currency conversions, and default

Table 2 shows real per capita GDP growth in the years before, during, and after the deposit conversion. Recalling that the periods in question are characterized by a general lack of confidence on the part of the public at large, a loss of access to international credit by both public and private sectors, high and in one case hyperinflation, uneven efforts at fiscal adjustment or austerity, and in some cases adverse external shocks (via terms of trade, international interest rates, or both)—it is hardly a surprise that growth implodes in the windows around the conversions.

The brief discussion in the last column of Table 2 also highlights that the sovereign external defaults were not resolved quickly. While not shown here (see Reinhart and Trebesch 2014), in all five episodes the exit from default involved debt relief, which ultimately took the form of haircuts on principal.

⁶ In 1977, Mexico began to allow its banks to receive foreign currency deposits, notably US dollars. These deposits were called *Mex-dollars*. By August 16, 1982, falling oil prices, rising US interest rates, and weak fiscal fundamentals drove the country to default on its external debts. On September 1, capital controls were imposed, banks were nationalized, and foreign currency deposits were prohibited and forcibly converted to pesos. As it was wryly observed at the time, *Mex-dollars* became *ex-dollars*

Table 2. Real Per Capita GDP Growth (percent)
and Sovereign Default Around Episodes of Forcible Currency Conversions

| Country and date of conversion | One year before | Year of the conversion | One year after | Status of sovereign debt and banks |
|---|-----------------|------------------------|----------------|---|
| Argentina, January 6, 2002 ¹ | -1.7 | -5.3 | -11.9 | Default on external debt on November 6, 2001, bank holiday and deposit freeze on December 1. Emergence from default June 1, 2005. |
| Argentina, December 28, 1989 | -3.1 | -8.1 | -3.4 | External default dated back to September 10, 1982-Hyperinflation (3,080% annual) in 1989. Emerges from default in 1993. |
| Bolivia, November 1982 | -7.4 | -5.9 | -6.0 | Default on external debt in 1980. En route to hyperinflation. Dollar deposits re-allowed in September 1986 to curb capital flight. Emerges from default in 1993. |
| Mexico, September 1, 1982 | 6.2 | -2.6 | -5.4 | August 16 default on external debt. September 1, nationalization of banks in response to banking crisis. Emerges from default in 1990. Dollar deposits re-allowed in December 1985. |
| Peru ² July 1985 | 1.4 | -0.2 | 9.6 | 1984 was Peru's fourth default episodes since 1978. It would not emerge from default status until 1997. Dollar deposits re-allowed in September 1988. |

Sources: International Monetary Fund, *World Economic Outlook*, Savastano (1996), Reinhart and Rogoff (2009), Reinhart, Rogoff, and Savastano (2013), Standard and Poor's

Notes: These episodes are considered as sovereign defaults on domestic debt (given the unfavorable terms imposed on the depositors.) In the midst of an economic crisis (and debt restructuring), in 1999 Pakistan froze foreign currency bank deposits in a n effort to stem capital flight. This was not at par with the other episodes of conversions, so we do not include it here.

¹Since the conversion occurs at the very start of the year (and the deposit freeze had already been in effect since December 2001, we treat 2001 as the year of the conversion and 2002 as the year after.

²In 1983 the output collapse is -11.5%.

Financial Disintermediation

In light of the aforementioned discussion on capital flight, parallel market premia, and the dearth of growth, a contraction in intermediation during these crises is not a surprise. The magnitude of the implosion shown in Table 3, however, surpasses what one may have anticipated. It is reminiscent of Diaz Alejandro's (1985) characterization of a process...

“...where domestic financial intermediation flourished and then collapsed.”

Table 3. Episodes of Involuntary Conversion of Bank Deposits and Financial Dis-intermediation (Bank Deposits as a Percent of GDP)

| Country and date of conversion | One year before | Average of the year of the conversion and the following year | Lowest level reached | Year in which the lowest level is reached |
|------------------------------------|-----------------|--|----------------------|---|
| Argentina January 6, 2002 | 27.3 | 22.5 | 22.4 | 2002 |
| Argentina December 28, 1989 | 21.3 | 11.4 | 7.7 | 1991 |
| Bolivia, November 1982 | 12.1 | 12.0 | 4.0 | 1985 |
| Mexico September 1, 1982 | 26.1 | 23.5 | 5.8 | 1988 |
| Peru, July 1985 | 20.6 | 15.7 | 12.8 | 1987 |
| Memorandum item for comparison: | | | | |
| | 1980 | 1985 | 1990 | 1995 |
| Chile | 21.5 | 26.2 | 30.7 | 35.6 |

Source: Banco Central de la Argentina, International Monetary Fund, *International Financial Statistics* and *World Economic Outlook*.

Final Remarks

In a scenario where Greece rapidly reaches a meaningful debt reduction agreement with its creditors and the ECB provides support to restore the confidence of Greek depositors in what is at present an insolvent banking sector, Grexit need not happen. If the road ahead leads to the drachma, the episodes described here highlight that such road is likely to be long and winding.

References

- Chang, P. H., Stijn Claessens, and Robert E. Cumby. "Conceptual and methodological issues in the measurement of capital flight." *International Journal of Finance & Economics* 2.2 (1997): 101-119.
- Diaz-Alejandro, Carlos. (1985). "Good-bye financial repression, hello financial crash." *Journal of Development Economics* 19.1: 1-24.
- Bartolini, Leonardo, and Allan Drazen 1997 Capital-Account Liberalization as a Signal." *American Economic Review* 87.1: 138-54.
- Reinhart, Carmen M., Kenneth S. Rogoff and Miguel A. Savastano (2014) "Addicted to Dollars," *Annals of Economics and Finance*, Vol. 15(1), May, 1-52.

Rose, Andrew. (2007). "Checking Out: Exits from Currency Unions." CEPR Discussion Paper 6254. See [Vox EU February 6, 2008](#).

Savastano, Miguel A (1996). "Dollarization in Latin America: Recent Evidence and Some Policy Issues," in P. Mizen and E. Pentecost (eds), *The Macroeconomics of International Currencies: Theory, Policy, and Evidence*, (Brookfield, Vt: Edward Elgar).