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Things We Learn from Crises

Abstract

What lessons were learned from the financial crises in emerging economies during the nineties and the first few years of the twenty first century? What do such lessons teach us about the reach and solutions of current crises? And conversely: What does today's crisis teach Latin American politicians and regulators about how to prevent the crises of tomorrow? This paper does not try to provide definite answers to such questions, instead it describes the similarities and differences sometimes missed by the usual studies in order to contribute to the debate on financial reform.

Resumen

¿Qué lecciones aprendimos de las crisis financieras en economías emergentes en los noventa y primeros años dos mil? ¿Qué nos dice este aprendizaje sobre los alcances y las soluciones a las crisis actuales? Y viceversa: ¿qué le enseña la crisis de hoy a los políticos y reguladores latinoamericanos sobre cómo prevenir la crisis de mañana? Este trabajo no intenta responder de manera sumaria a estas dos preguntas, sino ordenar similitudes y diferencias que a veces pasan inadvertidas en las analogías habituales, con el fin de contribuir al debate sobre la reforma financiera.

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1. INTRODUCTION

To quote Tolstoy,[1] we could point out that all unhappy countries are unhappy in their own way. In fact, one could go even further by applying to economic crises the Anna Karenina principle, according to which a successful endeavor (a country's fortune) is one where every possible deficiency has been avoided.[2]

In this way, a quick look at the European periphery crisis allows us to conclude that it is not about one misfortune but many, all of them different because they are associated to a diversity of deficiencies or catalysts, in many cases idiosyncratic to the country in question: the property bubble financed with cheap credit in Ireland and Spain, fiscal extravagance in Greece, economic decline in Italy, etcetera.

However, a more comprehensive view shows that there were common factors behind each of these crises, such as the convergence of interest rates within the Eurozone facilitating the financing of bubbles and temporarily cheap debt service or the absence of regional damage control mechanisms, leading to improvisation and increased market uncertainty.

It is precisely these common factors that allow lessons to be learned from the crisis. The crises of emerging Asia and Latin America illustrate this learning process, with lessons learned and structural changes which ended the crises of the nineties. This resulted in the financial strength of such countries when faced with global contagion in 2008 and their rapid stabilization in 2009. It also led to the contrast with emerging Eastern European countries, behaving more like Latin American economies during the nineties –and the euro area periphery– than emerging markets of the new millennium.

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[1] The famous opening lines of Anna Karenina: "Happy families are all alike, every unhappy family is unhappy in its own way."

[2] The Anna Karenina principle was popularized by Diamond (1997) to explain why so few wild animals have been successfully domesticated throughout history, attributing this to the multiple conditions necessary for achieving such domestication.

What lessons did we learn from those crises which can help us prevent these? What do such lessons teach us about the reach and solutions of current crises? And conversely: What does today's crisis teach Latin American politicians and regulators about how to prevent the crisis of tomorrow? This paper attempts to give concise answers to these two questions.

2. LESSONS FROM THE INTERNATIONAL CRISIS

One first aspect to take into consideration when filtering through the lessons for Latin America from the recent international crisis is that it was not a homogenous crisis but a succession of linked but different crises: the collapse of the subprime mortgage market, contagion to the US financial system through the structural distribution of such mortgages, the macroeconomic crisis breaking out after Lehman Bothers' bankruptcy and its rapid global expansion and, finally, resulting from the latter, the systemic crisis of the European periphery.

Although literature has individualized different aspects of the US mortgage crisis, analysis of multiple factors is not just an accumulative exercise: it is difficult to conceive the crisis in its last global stage without some of these factors. Thus, the so-called Great Recession is perhaps an example of the aforementioned Anna Karenina principle in its negative version: only the co-existence of failures and risk factors could have led to the perfect storm of 2008-2009.

By simplifying slightly we can identify four factors which came together to create this storm: *i)* the Great Moderation (the illusion of a period of stability with low inflation and high growth which stifled warnings and countercyclical responses); *ii)* lack of regulation involving supervision of the system as well as the basic principles upon which it was founded; *iii)* political motives linked to the right to housing which silenced critics.

2.1 Easy Money

Low interest rates in advanced economies during the middle of the first decade of the twenty first century undoubtedly contributed to generating the conditions for the creation of the housing bubble and its spread to sectors supposedly more isolated from financial speculation. Among the different reasons put forth for explaining this excess liquidity perhaps the most important is connected to political complacency –a term which will reappear under different contexts in our analysis– , in this case associated with monetary policy implementation.

The Great Moderation was a popular term during the last decade for positively describing a period of less volatile inflation and GDP (Blanchard and Simon, 2001), together with less frequent and milder recessions (Stock-Watson, 2003) in the developed world (except Japan). The term boasted a change in patterns, justifying that healthy levels of growth (particularly in the USA) at the time did not require a more energic increase in short-term interest rates by the Federal Reserve.

The explanations elaborated during the 2000s to sustain this noble combination may be placed into three main groups (Bernanke, 2004):

i) Optimism: structural changes in institutions, technology, business administration, inventory management, etc., which permanently optimized cyclical performance (McConnell and Pérez-Quirós, 2000).

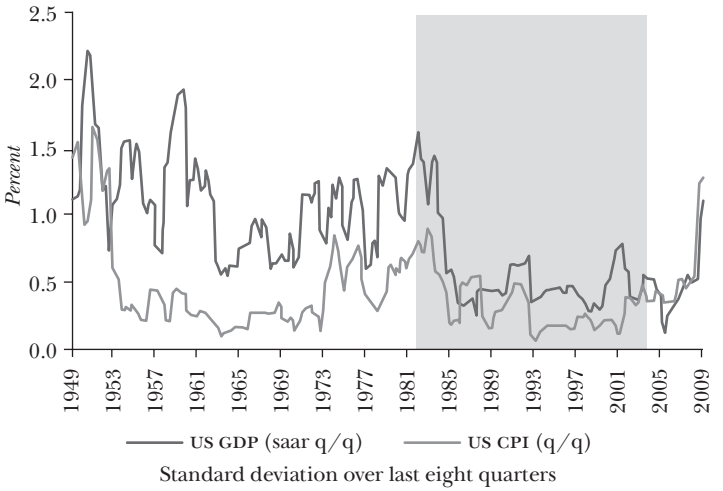
ii) Skepticism: the good luck of receiving less external shocks (the absence of oil price shocks for instance) or a reduced dependence on them (Stock and Watson, 2003).

iii) Complacency: Specifically progress made in monetary policy implementation.

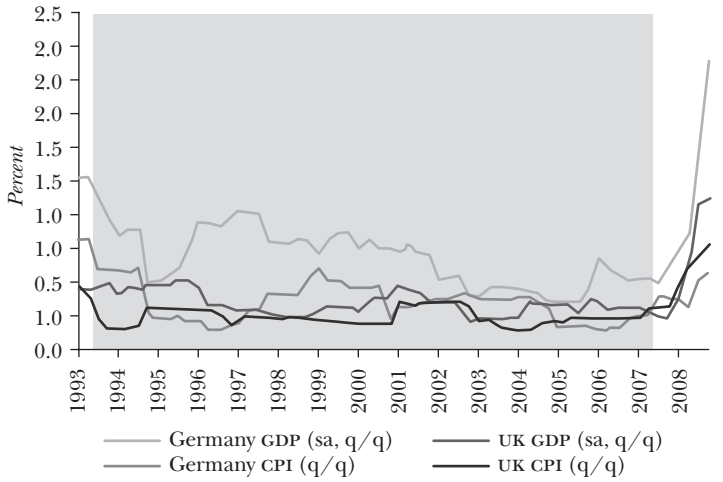
Of these three groups the third definitely had the most influence on monetary policy decisions given that it was the one wielded by the Federal Reserve for justifying passive monetary

Figure 1

THE GREAT MODERATION: LOW OUTPUT VOLATILITY AND INFLATION…



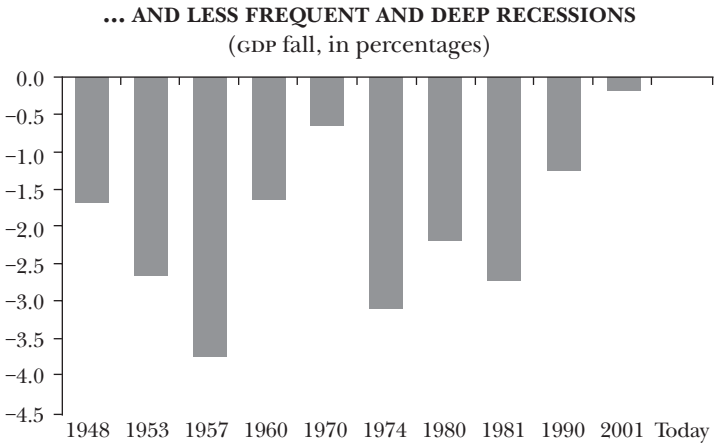
Standard deviation over last eight quarters



Standard deviation over last eight quarters

Source: Haver Analytics and Barclays Capital.

Figure 1 (continuation)



Source: Barclays Capital.

policy before the crisis. From an historical point of view, the argument emphasized that faced with *Taylor's dilemma* of the trade-off between output volatility and inflation volatility the seventies were characterized by a mixture of *output optimism* (belief in a long-term Phillips curve fueling an ambitious objective of low unemployment of 4%) and *inflation pessimism*, where this was attributed to cost shocks and intermediation margins difficult to manage with monetary policy (leading to the bias towards price and wage controls). All of this resulted in the monetary hyperactivity which had caused the considerable volatility of activity and prices during that decade.

In contrast, the Volcker-Greenspan period had been characterized by greater emphasis on inflation and increased monetary clarity (and hypoactivity)[3] –a minimalist style as it was

[3] More formally, in the traditional terms of the Taylor rule: $i = \pi + r^* + \alpha(y - y^*) + \beta(\pi - \pi^*)$ –where r^*, y^* and π^* are the real interest rate, growth and long-term equilibrium inflation– the improvement would have been associated to an increase in β at the expense of α –hypothesis documented by Clarida, Galí and Gertler (2000) but questioned by Orphanides (2003), which sustains that

described accurately and with praise by Mervyn King (2005) in his the *Maradona theory of interest rates*.[4]

Another argument, this time negative, used to justify low interest rates in the usa refers to the demand for reserve assets (US treasury bonds) by developing countries with large external surpluses –fueled by a peak in commodity prices (which mimicked the petrodollar affluence of the seventies) in oil nations and some emerging economies or by the rapid growth of exports, such as in the case of China.[5] Thus, in a financial

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more than a change of weight, the hyperactivity of the seventies must have been associated to overestimation of the output gap (resulting from an underestimation of the fall in US productivity).

[4] According to King, Maradona's second goal against England in the 1986 World Cup "was an example of the power of expectations in the modern theory of interest rates. Maradona ran 55 meters from inside his own half beating five players [...] virtually in a straight line" because "[...] the English defenders reacted to what they expected Maradona to do. Because they expected Maradona to move either left or right, he was able to go straight on. Monetary policy works in a similar way. Market interest rates react to what the central bank is expected to do. In recent years the Bank of England and other central banks have experienced periods in which they have been able to influence the path of the economy without making large moves in official interest rates. They headed in a straight line for their goals. How was this possible? Because financial markets did not expect interest rates to remain constant. They expected that the rates would move either up or down. Those expectations were sufficient –at times– to stabilize private spending while official interest rates in fact moved very little."

[5] The reasons for this demand, which refers to an absence of international reserve assets persisting up until today, were boosted by the impact of the financial crisis at the end of the nineties –and the disappointing IMF led aid packages – on the preference for a positive short-term net investment position in order to have a liquidity buffer in case of new capital reversals. This explains not only the external dis-indebtedness and the accumulation of international reserves but also resistance to currency appreciation in order to prevent high trade deficits. The 2008-2009 crisis definitely contributed in the same direction.

version of the Triffin dilemma, as the middle and long part of the US yield curve declined, world demand for US Treasury bonds would have neutralized the transmission of tighter monetary policy –in this way preventing the Federal Reserve from continuing to raise interest rates for fear of causing a flattening of the yield curve.[6]

2.2 Policy: Property Creation and the Cost of Countercyclicality

Pressure from low interest rates and a relatively flat yield curve on the financial system for the search for profit in financial intermediation was negatively combined with the bias of US policy toward homeownership –reflected in the capacity for netting mortgage payments from income tax or in the creation of large government-sponsored enterprises, GSEs, such as Fannie Mae and Freddie Mac which represent an implicit public guarantee (and, explicit after the crisis) on loans conforming to GSE guidelines.

It is therefore not surprising that incipient protests and warnings about the consequences of the property bubble were ignored by US politicians.[7]

In fact, the loosening of risk evaluation standards and the shifting of credit quality ratings starting in 2000 –when subprime mortgages became available for first time buyers at adjustable rates made more attractive by so-called *teaser rates* (close to zero at the start and climbing rapidly thereafter),[8] liar and NINJA loans *(no income, no job, no assets)* and, above all the

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[6] Warnock and Warnock (2006) estimate that such flows towards low risk US assets reduced ten-year interest rates by around 90 basis points.

[7] Examples of warnings about a possible bubble can be seen in Schiller (2005), Krugman (2005) or Baker (2005). Nevertheless, not all analysts believed there was a bubble (Smith and Smith, 2006; Himmelberg et al., 2005).

[8] High pre-cancelation fees guaranteed the bank the profit of capital from home appraisals.

popularity of the collateralized debt obligations (CDOs)–[9] coincided with a period when homeowner rates and the demand for less risky borrowers flattened.[10]

Secondly, the natural reluctance of politicians to stall the process of economic expansion, although much less specific to this crisis, was amplified by two features of the US case. On the one hand, the concentration of American household savings in leveraged real estate assets. On the other, the capacity of the local banking system for monetizing the value of such assets almost immediately (the so-called equity withdrawal made by obtaining a second mortgage for instance), which represented an increase of close to 5% of available income between 2000-2005 (Greenspan and Kennedy, 2007) and fueled both consumption and reinvestment in bricks and mortar (and via this channel the bubble).

2.3 Regulatory Failure: Greenspan, Basel and the Paradox of Self-Regulation

How did a bubble concentrated among a few mortgage credit institutions become a systemic financial crisis? Explanations tend to emphasize the search for yields by banks, insurance companies and institutional investors, leading them to take on the subprime bubble through mysterious structured assets that benefitted from generous credit ratings or through the creation of special investment vehicles linked to the mother institution by credit lines. This kept their exposure out of the balance and far from the eyes of the regulator, transforming credit risk into liquidity risk.

Less emphasis is normally placed on the role, in our view critical, of the regulator. In a speech in 2002 on regulation,

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[9] In line with a gradual reduction of quality, the growth of mortgage credit was higher in areas historically characterized by a larger number of rejected applications (Mian and Sufi, 2009).

[10] Demyanyk and Von Herbert (2008) and Dell'Ariccia et al. (2009) link the deterioration in the quality of mortgages to their rapid growth.

innovation and wealth creation, then president of the Federal Reserve, Alan Greenspan, pointed out that, "regulation [in the over-the-counter derivatives market] is not only unnecessary[...] it is potentially damaging, because[...] forced disclosure of proprietary information (even on a confidential basis solely to regulatory authorities) can undercut innovations in financial markets[...] Innovators can never be fully confident[...] of the security of the information[...] the resistance by many to such arguments suggests a more deep-seated aversion to the distress that often accompanies the process of creative destruction" (Greenspan, 2002).

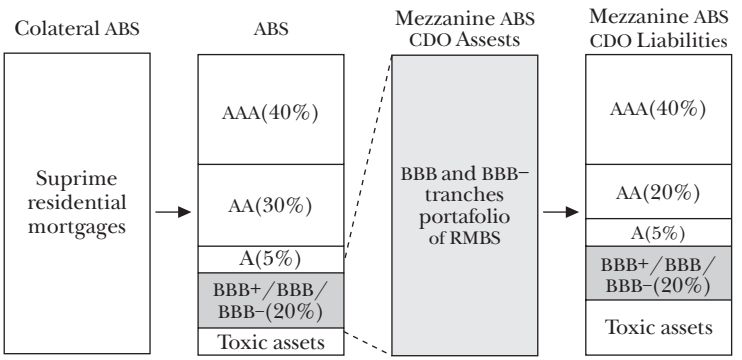
The paradox of innovation as the seed of destruction, not necessarily creative as Greenspan states, was the collateralized debt obligation in all its different versions. Negotiated over-the-counter by brokers (not stockbrokers), these unstandardized contracts with personalized terms –not always transparent for investors and assessors– exploited the benefits of diversification, starting with subprime mortgages, to obtain investment grade instruments (Diagram 1). Such process was facilitated by rating agencies which competed for obtaining contracts by offering more generous ratings (the so-called issuer pays bias) minimizing correlation risk[11] and by a system of self-evaluation authorized by Basel and mostly based on the referred credit –generating a strong incentive for banks to arbitrate between high grade low yield bonds and high grade high yield CDOs.

On the other hand, the use of the same ratings scale for fixed interest instruments with binomial risk (bonds for instance)

[11] Correlation risk refers to the fact that the correlation between events, which are relatively independent under normal circumstances (default on subprime mortgages for instance), increases rapidly during systemic episodes (a low cycle of property prices for instance). Thus, analyses based on historic series which do not include such event significantly overestimate the benefits of diversification (underestimating risk). In the end, if the probability of default is perfectly correlated, all the types of asset backed securities (ABS) or CDOs have the same default probability and anticipated loss, meaning diversification disappears.

Diagram 1

CDO: SIMPLIFIED PROTOTYPE



Source: Hull (2008).

and structured instruments with atomized risk (CDO) contributed to incorrect readings. For instance, even though triple A debt instruments and triple A CDOs have very different sensitivities to debt-to-equity ratios and credit conditions, they are treated similarly by the agencies (and therefore by regulators).[12]

Finally, the influence of the Basel II framework and its close (and growing) dependence on credit ratings cannot be overlooked, neither can the capacity of large systemic banks for evaluating and quantifying the value to risk of their portfolios based on internally developed models. The crisis showed the limits of this self-regulation paradox and the advantages of erring from the conservative side when dealing with complex financial intermediation.

2.4 Lessons for Latin America?

In light of what has been said, beyond the repeated (and slightly obvious) reference to the negative effects of growth based on over indebtedness and the procyclicality and complacency of

[12] For a detailed study of the limitations of traditional risk evaluation for CDOs see for instance Wojtowicz (2011).

policies (in this case monetary and prudential) during the so-called Great Recession of 2008-2009, there are several specific factors which had they not combined would have avoided a collapse of such magnitude and extent: prevailing low interest rates fueling the greed of the financial system and the illusion of securitization; overestimation, by a prudential framework and a body of regulators biased against strict supervisión, of the power of risk evaluation by banks (through their internal models) and rating agencies (seized by *issuer pays bias*); the political value of housing (and universal housing as a political aim in the USA). All of these were factors conspireing to allow irreversible contagion to the financial system from a boom in high risk mortgages and a property bubble, generating a panic which resulted in a global contraction.

Nevertheless, in practical terms not much can be extracted from this as lessons for economies in Latin America beyond general opinions on the danger of excessively dynamic credit and the need for continually reviewing the regulatory framework in order to identify the prudential implications of financial innovation. The fact is that most banks in the region during the first decade of the twenty first century were scarcely exposed to structured or variable interest rate products and exhibited little appetite for external assets in general. This was perhaps due to their being made immune by the memory and experience of recent banking crises which strengthened bank regulation and supervision, or maybe because they were taking advantage of the lack of sophistication and depth in their financial markets, satisfied by the yields found in economies with low levels of bankerization and high growth.

Furthermore, although credit has grown steadily both before and after the crisis –information which has alerted monetary authorities and has led in many cases to the application of containment measures–, it has done so at very low levels compared to other countries with high average incomes.[13] In

[13] It is worth pointing out that the property boom and collapse was not caused by the credit crunch but that of securitization,

this context, the question of whether the credit boom is worrisome or a result of delayed convergence merits a specific research agenda.

3. CONVERSELY: LESSONS FROM CRISES IN EMERGING MARKETS

The latest generation of emerging crises, from the 1994 Tequila crisis of Mexico to that of convertibility in Argentina in 2001 and on to those of East Asia and Russia's default, involved countries with diverse characteristics and environments. However, beyond questions of idiosyncrasies, there are common patterns in all of the aforementioned which allow us to extract lessons for understanding crises in the developed world –or in the worst case scenario to avoid mistaken analogies.

Taking into account the limits imposed by simplifying for demonstrative purposes, we can encompass the lessons from such crises (and, to a great extent, the debt crisis at the start of the eighties stemming from the reduction of global liquidity after a period of strong expansion in bank credit to emerging countries) in two main chapters. On the one hand, the currency problem, an essential factor for explaining the common origin and evolution of all these events, and on the other, the resolution, particularly the role played by the restructuring of liabilities in each countries' economic recovery and later performance.

3.1 The Currency Problem

In order to define the position of the currency problem in the origin of financial crises in emerging economies during the nineties and at the start of the twenty first century, it is important to begin with the conclusion: All these crises (as well as

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meaning, even when correctly applied, macroprudential practices should not be included in lessons from the crisis.

their precursors and, to some extent, originators: the debt crises of the eighties) were essentially currency crises.

What are we specifically referring to here? Situations where the economy as a whole (i.e., the public sector plus the private sector) maintains a short-term net debtor position in foreign currency, meaning that a speculative run against local assets (including the currency), if successful, has a balance effect (a deterioration in payment capacity) which, given the lack of foreign currency liquidity, in the end justifies the run. Thus, in the absence of an international lender of last resort, the currency mismatch introduces the conditions for a self-fulfilling run, even if the country does not suffer from an insolvency problem.

The currency problem can appear in various ways. In Latin American crises the public sector is commonly the main debtor, be it due to the effect of debt inherited from the eighties (the acceleration of servicing rising interest rate or step up Brady bonds is usually mentioned as one of the reasons for financial fragility) as a result of complacent or directly procyclical fiscal policies. On the other hand, in the case of South East Asian countries with fiscal surpluses affected by periods of financial strains at the end of the nineties, the mismatch emerged in the private sector in bank balance sheets (due to financing in foreign currency re-lent internally in local currency, such as in the case of Korea) or in debtor firms (due to foreign currency loans to firms with domestic income in local currency).

The source of the mismatch is irrelevant to our analysis: in a systemic situation (a devaluation affecting the payment capacity of a significant fraction of debtors for instance) private debt cannot be left ignored by the government given the risk of paralyzing the banking system and the economy as a whole. Thus, if the private mismatch is large scale it must be (and is normally) considered as a contingent government liability.[14]

[14] There is a vest amount of literature on the role of currency mismatches in emerging market crises. For reasons of space we can only mention here the models of Céspedes, Chang and

The European crisis is a perfect illustration of the currency problem. What is the difference between the Italy of 2011 with a debt-to-GDP ratio of NN% and pre-euro Italy, say of 1998, with a debt-to-GDP ratio of NNN%? Why did the crisis emerge in Europe and not in the UK, equally harassed by a growing debt and in need of a substantial fiscal adjustment? Why does Japan or the USA preserve their status as issuers of last resort (i.e. issuers of reserve assets) despite a debt in many cases comparable to that of European countries with problems?

Of course, the answer can only refer to the denomination of the debt in question. It is difficult to conceive that a country which is willing to pay (such as all those mentioned) can fall into default if it has the option to pay by printing money (and dilute the weight of the debt with inflation). In fact, it is not easy to find cases of default in local currency (except when this is combined with an important amount of debt in foreign currency).

It is important to mention two of the different implications of this feature of crises in emerging markets.

The first of these is negative: Little of that experienced by emerging economies in their *crisis years* can compare with that seen since 2007 after the property bubble. In particular, it is difficult to associate the nineties crises with microprudential idiosyncratic risk indicators of the type emphasized by the most traditional banking supervision. In fact, given the systemic character of currency crises in emerging markets one could talk about the irrelevance of the microprudential view, or more specifically, of its low level of information regarding macroeconomic shocks (of which currency risk is one example) that can increase default and worsen bank solvency overnight.[15]

Velasco (2000), Aghion, Bacchetta and Banerjee (2001), and Gertler, Gilchrist and Natalucci (2001), and the empirical works of Calvo, Izquierdo and Mejía (2004) and Frankel (2005) on contractionary devaluations.

[15] For a detailed analysis of the incidence of idiosyncratic and systemic indicators on periods of crisis in emerging markets, Argentina 2001 and Uruguay 2001, see Levy Yeyati et al. (2010).

Argentina, perhaps the archetypal emerging market crisis, illustrates the point completely. At the end of 2000, on the eve of the bank run which would lead to the end of the currency board, the Argentine banking system was classified as the third largest in the emerging world according to a World Bank study. In fact, a look at the evolution of the main prudential indicators (the so-called bank fundamentals) showed a liquid, stable and well supplied system.

Table 1

ARGENTINA'S PRUDENTIAL INDICATORS IN 2002: A HEALTHY PATIENT

	1997	*1998*	*1999*	*2000*
Net equity/assets	12.1	11.4	10.7	10.5
Capital/ assets weighted by risk	18.1	17.6	18.6	21.2
Past due loans /totals (a)	10.1	9.1	10.5	11.6
Provisions/total loans	6.2	5.5	6.1	7.3
Provisions/past due loans	60.9	60.4	58.4	63.3
Core systemic liquidity	43.0	39.6	40.9	38.7
ROE before provisions	22.6	10.6	8.4	7.8
ROE after provisions	7.4	–2.2	–6.7	–9.4
ROA after provisions	1.0	–0.3	–0.8	–1.0
Leveraging (not a percentage)	6.1	7.3	7.7	8.3

Source: De la Torre et al. (2002)

The second implication, which we will return to, is descriptive. If the euro area is seen as a *country* indebted in local currency (the euro) issued by the European Central Bank (ECB) the debt ratio of periphery countries should not lead to a speculative attack or a wave of selling any more than in other countries such as the USA, Japan or the UK. Moreover, one would expect inflation to be used as part of the efforts to deleverage these countries, which could raise interest rates in euros –although not necessarily judging by what has happened in other indebted countries. If, on the other hand, the ECB continued to show independence regarding the countries it represents

and reluctance to monetize debt service, the situation of economies on the European periphery would not be very different from that of emerging economies during the nineties (or of Eastern European countries battered for the same reason during the latest international crisis): foreign currency debt (i.e., a currency the country does not issue at its discretion), currency mismatch, exposure to self-fulfilling runs and financial instability. An inherently unstable combination which is likely to result in devaluation and liability restructuring as in the precedents set by the emerging world.[16]

3.2 Crisis Resolution and Incentives

One simple way to understand the resolution of a systemic financial crisis (strictly speaking, a sovereign crisis) is by breaking the problem down into two main aspects: stocks and flows. These two aspects are obviously closely related: the stock (e.g. dollarized debt) is the result of accumulated flows (fiscal or current account deficits financed by issuing securities). Nevertheless, the relevance of flows and stocks may vary considerably at the time of a crisis.

The persistence of the problem of stocks leads to the so-called debt overhang which in turn limits investment and growth, eventually raising the debt-to-GDP ratio. The persistence of the problem of flows generates a liquidity crisis which can (and usually does) trigger a financial crisis.

The problem of stocks compromises a debtor's solvency (and, in the end, the country's) and requires debt relief via a rescue package implying a permanent net transfer of resources or restructuring with debt reduction. The problem of flows, on the other hand, requires financing during the adjustment period. For this reason it is difficult for a debtor (private or sovereign)

[16] As we will argue below, Europe is currently in an intermediate situation with the European Central Bank acting as lender of last resort, limiting and conditioning its liquidity assistance.

who is over indebted (i.e., with problems of stock) to solve the crisis by refinancing their obligations.

Once again the experience of Latin America –this time during the eighties– helps to illustrate this point. The *Baker* plan, the initial response of the international financial community to the developing world's sovereign debt crisis, focused on refinancing the bank debt which several middle income countries had acquired during the seventies (years characterized by high oil prices and plentiful liquidity stemming from the intermediation of the oil surplus through international financial markets), failed to solve the problem of stocks by adjusting flows, resulting in the so-called lost decade.[17] In response to this failure, the Brady Plan of 1989 acknowledged the need for debt reduction through agreement with creditor banks.[18]

Nevertheless, even if the stock problem is solved by debt swaps involving debt relief, the country must solve its problem of flows, more specifically, the fiscal and external deficits which led to the accumulation of debt in the first place. Here is where the concepts of fiscal adjustment (austerity as it is now known) and devaluation become relevant –and on many occasions, confusing.

On this front the experience of the emerging world, frequently used as an example, offers curiously contradictory lessons. The positive view of debt crisis exits with devaluation point to devaluation as a way of regaining lost competitiveness stemming from the external deficit, benefitting exports and

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[17] Ten out of the fifteen countries included in the plan were Latin American.

[18] The operation consisted of repurchasing bank loans by the country issuing Brady bonds which included a reduction in the original obligation both in the coupon and the principal. Curiously, one of the plan's benefits was to inaugurate the international atomized bond market for these countries (in practice, the start of the so-called emerging markets), the source of over indebtedness and later crises in the nineties. See Clark (1993) and Sachs (1989).

above all substituting imports without forcing a nominal reduction in prices and wages through a prolonged recession.

The nineties version of exit by devaluation recognizes that the negative balance effect on stocks of foreign currency debt can more than offset the positive impact of devaluation and generally requires debt relief, a forced conversion of local currency, or both of these, to reduce the referred effect. Once the balance effect has been eliminated the devaluation would contribute to closing the external gap and accelerate the recovery by reducing the fiscal deficit.[19]

However, a look at the empirical evidence shows that the benign effect of devaluation on the level of economic activity has little to do with competitiveness.

Table 2 shows how the analysis reports the effect of an undervalued currency on the different components of GDP (Gluzmann et al., 2011), demonstrating that neither imports nor exports are higher in real terms (in nominal terms they obviously are, reflecting the change in relative prices in favor of tradable goods and services associated with an undervalued exchange rate). In fact, both fall in periods of high exchange rates.

On the other hand, there is a positive effect on saving (at the expense of consumption) and investment in line with a fall in wages and an increase in the capital-labor ratio of functional income distribution (Levy Yeyati and Sturzenegger, 2007), suggesting a different channel –although not necessarily a new one– behind the stimulus of a devaluation to long-term growth.

In fact, the interpretation set forth by the two aforementioned works points to the role of firms' internal funds (originating from lower wage costs) as the driver of recoveries in the absence of bank credit as documented by Calvo et al. (2006). The favorable effect of devaluation on the flow of firms' revenues in many cases is combined with the positive effects of the

[19] The most general argument refers to the role of the exchange rate in increasing output via competitivity gains (Rodrik, 2008). Prasad et al., (2006) and Rajan and Subramanian (2005) provide evidence for this hypothesis.

Table 2

WHERE DOES CURRENCY UNDERVALUATION HIT?

	T=1	*T=2*	*T=3*	*T=4*	*T=5*
GDP per capita	0.017[c] (3.300)	0.017[c] (2.880)	0.020[c] (3.010)	0.018[b] (2.440)	0.022[c] (3.160)
Nominal values					
Consumption / GDP	–0.043[c] (6.900)	–0.039[c] (4.610)	–0.041[c] (3.720)	–0.033[b] (2.430)	–0.054[c] (3.450)
Investment / GDP	0.036[c] (5.210)	0.037[c] (3.880)	0.043[c] (3.740)	0.049[c] (3.660)	0.059[c] (4.140)
Exports / GDP	0.022[c] (2.640)	0.015 (1.280)	0.016 (1.170)	0.001 (0.040)	0.007 (0.370)
Imports / GDP	0.015[a] (1.750)	0.013 (1.070)	0.018 (1.240)	0.016 (0.960)	0.013 (0.630)
Saving / GDP	0.043[c] (6.900)	0.039[c] (4.610)	0.041[c] (3.720)	0.033[b] (2.430)	0.054[c] (3.450)
Real values					
Consumption / GDP	–0.039[c] (6.020)	–0.039[c] (4.150)	–0.043[c] (3.540)	–0.026[a] (1.720)	–0.013 (0.760)
Investment / GDP	0.009 (1.330)	0.018[a] (1.780)	0.029[b] (2.340)	0.030[b] (2.090)	0.032[a] (1.840)
Exports / GDP	–0.065[c] (6.820)	–0.064[c] (4.700)	–0.057[c] (3.510)	–0.051[c] (2.720)	–0.046[b] (2.060)
Imports / GDP	–0.095[c] (8.860)	–0.086[c] (5.470)	–0.070[c] (3.580)	–0.047[a] (1.760)	–0.028 (0.900)
Saving / GDP	0.039[c] (6.020)	0.039[c] (4.150)	0.043[c] (3.540)	0.026[a] (1.720)	0.013 (0.760)

Notes: T = *n* indicates the regressions were made employing averages of *n* years. Robust *t* statistics in brackets. [a, b] and [c] stand for 10%, 5% and 1% significances.

dilution of corporate debt, together with government rescue packages, subsidies, restructuring or, in the same context, of converting local currency liabilities at the exchange rate before the crisis (known as *exchange insurance*), as in the case of Argentina in 2002.[20]

[20] More generally only internal debts (i.e., according to local law) can be pesified by the government.

The traditional argument is paradoxically linked with the model of contractionary devaluations developed by Díaz Alejandro (1965) for *agricultural based societies,* but adapted to the context of semi-industrialized middle income countries. In the original story, beneficiaries of the devaluation (landholders of developing countries with very small domestic financial markets, high income individuals with a strong inclination towards saving in foreign assets), invested most of the additional revenues associated to the devaluation abroad. This resulted in a fall in aggregate demand and a contraction in the level of economic activity due to capital outflows. In the semi-industrialized emerging economy, a significant part of these extraordinary revenues are reinvested domestically in real assets (reserves such as real estate, or output such as machinery and equipment). This results in a swift rebound in investment despite a lack of credit.

Although this mechanism of income redistribution can in principle be applied to any real depreciation, it is also powerful in the context of a crisis where unemployment and idle capacity limit the pass through to prices, maximizing the real dividends of a nominal devaluation.

Furthermore, this *reverse Díaz Alejandro effect* is boosted by the impact of the crisis resolution on stocks. The fact is that the rescue of private debtors (firms and high income households with access to credit) at the expense of internal or state creditors (a significant part of debt restructuring in emerging market crises) implies a regressive redistribution of domestic wealth with similar effects to those mentioned for revenues.[21] Argentina, with its mandatory conversion (*pesification*) of domestic debt is perhaps the clearest example of this wealth effect.[22]

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[21] On the other hand, rescuing debtors at the expense of external creditors via a restructuring benefits.

[22] It could be argued that the extraordinary revenues of holders of foreign currency assets would be unfair in terms of equality (Spector, 2009). However, the fact that these actually represent the confiscation of profits by contingent valuation instead of profits made (wealth) tends to reduce legal and political resis-

Finally, it is important not to forget that many developing countries experiencing financial crises were characterized by a substantial offshoring of savings which in many cases increased on the eve of the crises and was one of the factors causing them. In fact, it is not unusual for countries with a currency problem (firms and government with a debtor position in US dollars) not to have a complete currency mismatch given the long position (many time under recorded) of individuals. In any case, the stock of foreign currency savings held abroad provides an additional vehicle for the wealth effect from the real devaluation referred to in the previous paragraph.

In sum, peso floatation could have modestly favored the substitution of imports and the growth of untraditional exports. However, its true contribution as a catalyst for growth was its dilution of labor and financial costs (private and public) and, together with *pesification*, its *positive balance effect* on debtors and offshore savers which benefitted local saving and investment, and, thereby, job creation. In other words, the key was not, as is usually stated, in the competitivity gains traditionally associated to anticyclical devaluations, but in the regressive transfer of wealth typical to every *successful* currency collapse.

The vast experience of the emerging world also throws light on an intensely debated topic concerning financial crises: the questions surrounding the consequences of debt restructuring. Why if in most cases restructuring is perceived as inevitable do countries tend to delay the decision at significant economic cost? The typical answer points to the important economic costs of default. However, recent studies on the topic have found it difficult to quantify a systematic cost, be it for accessing capital markets or in terms of post-default economic growth.[23]

The relationship between default and growth is the clearest example of the ambiguity linking both concepts (Levy Yeyati

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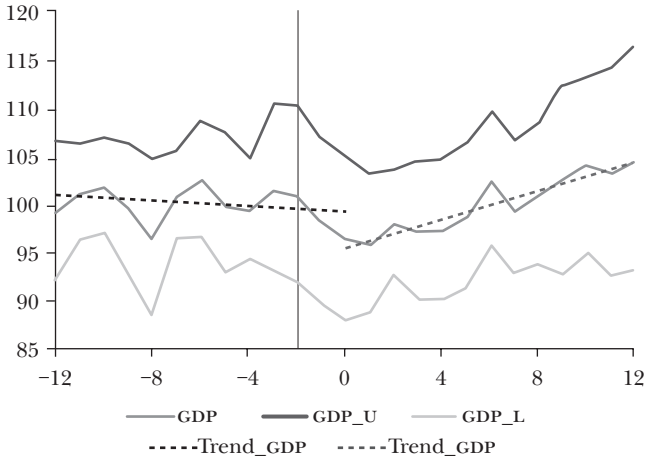
tance to pesification.

[23] Panizza y Borenzstein (2008) present a summary of the recent literature as well as some new results which are equally mixed or negative.

Figure 2

GDP BEFORE AND AFTER A DEFAULT

(seasonally adjusted GDP)



Source: Levy-Yeyati and Panizza (2006).

and Panizza, 2008). Judging from the experience of emerging markets, countries start to grow after a default (Figure 2).[24] Of course, one should not infer from this that there is a causal relationship between default and economic growth. However, one could say that the fall in GDP preceding the default is due to the fact that agents anticipate probable default, causing the country to incur the cost prematurely (even increasing the likelihood of default) before default had been actually declared.

Yet, in this case, why does the government wait until all the cost has been incurred? Here economic theory offers at least two alternative answers. The first is related to the work of Grossman and Van Huyck (1989) on *excusable* defaults, i.e., non-opportunist, according to which a country (a government) incurs the cost in order to prove its willingness to pay. As in all

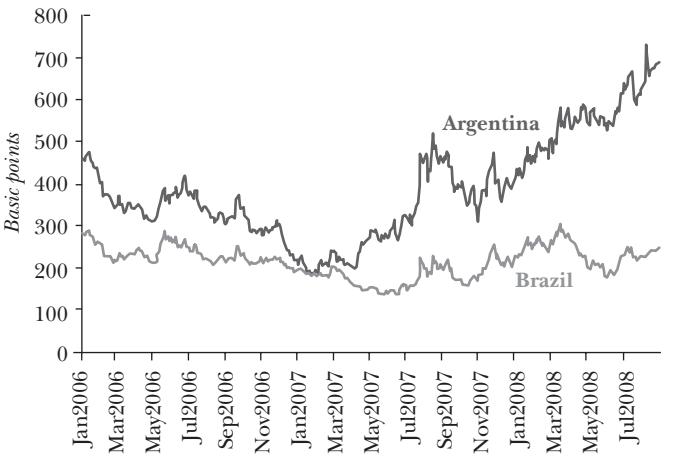
[24] Crucially, the results are based on seasonally adjusted quarterly series. The same regressions employing annual series do not usually provide significant results.

signaling games, the story assumes a certain persistence of the type of government in such way that the event will be rewarded in the future in the form of improved access to capital. This assumption would be in line with the lack of evidence for a bias against those who default – although this is partly at odds with the fact that governments hardly ever survive a default which would change the type of government thereby diluting the effort identifying effect.

The latter suggests a second reason behind political resistance to throw in the towel and accept an inevitable default: the interest of the government in preserving its political capital, many times by obtaining loans from international financial organizations for repaying in principle *unattainable* private debt. Thus, international aid packages (those led by the IMF for instance) could be interpreted as suboptimal transfers to the creditor not at the expense of the international community as usually insinuated by the traditional argument of moral risk, but at the cost of (future revenues from) the local tax payers,

Figure 3

LET BYGONES BE BYGONES. ARGENTINA AND BRAZIL SOVEREIGN SPREADS AFTER THE ARGENTINE SWAP



Source: Global Economic Monitor, World Bank.

resulting in it being known as government moral hazard instead of country moral hazard (Levy Yeyati, 2005).

It is true that, if default does not visibly affect economic growth, it has an even smaller impact on access to credit, confirming the importance of the saying *bygones are bygones* which would initially be followed by the strategic financial investor. After all, if restructuring is actually the consequence of payment incapacity, what better than a good restructuring to put the country back on the path to solvency.

Once again Argentina illustrates this point perfectly: months after a recognizably ambitious debt swap that resulted in a historically large capital relief (Sturzenegger and Zettelmeyer, 2005) in order to leave the country with an easily manageable debt profile, Argentina's differentials had converged to the same levels as those of Brazil (Figure 3).

3.3 The European Dilemma from an Emerging Market Perspective

As previously mentioned, the debt crisis in the European periphery has diverse origins and intensities. Nevertheless, an analysis from the perspective of an emerging market crisis reveals common aspects and clarifies the possible alternatives.

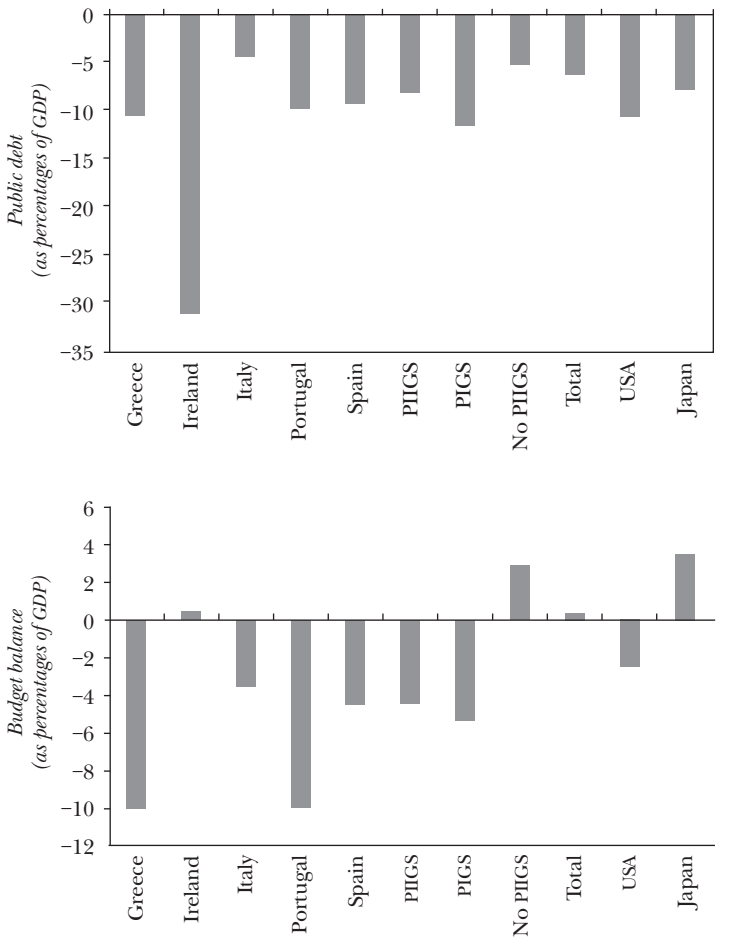
The European dilemma is, just as in many Latin American economies at the moment they experienced a crisis, both financial (large stocks of debt) and real (large fiscal and current account flow gaps). A solution centering only on the stock problem (debt restructuring or dilution) would be incomplete if it were not complimented by a plan for relieving the problem of flows (to recover price competitivity and growth, reduce or sustainably finance the fiscal imbalance).

However, the dilemma is above all political. Taken as a whole Europe would have manageable fiscal deficits, a balanced external sector, and most importantly, domestic currency (the euro, which can be issued at discretion) debt levels comparable to those of the USA and Japan (Figure 4). In this case the currency problem crucially disappears.

Meanwhile, if Europe is taken as a group of sovereign economies with an independent (or dependent on the subgroup of economies with external surpluses) European Central Bank (ECB), countries on the periphery are very similar to Latin American economies in the eighties and nineties, deeply

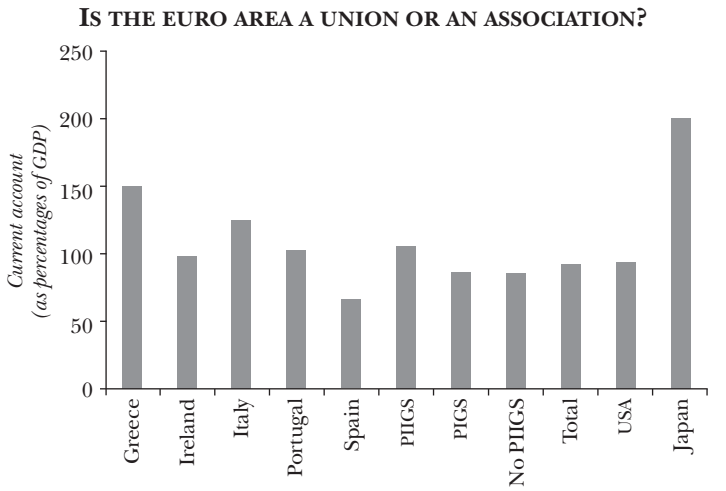
Figure 4

IS THE EURO AREA A UNION OR AN ASSOCIATION?



Note: PIIGS stands for Portugal, Ireland, Italy, Greece, and Spain. Meanwhile, PIGS stands for Portugal, Ireland, Greece, and Spain.

Figure 4 (continuation)



Note: PIIGS stands for Portugal, Ireland, Italy, Greece, and Spain. Meanwhile, PIGS stands for Portugal, Ireland, Greece, and Spain.

indebted in foreign currency (the euro) and exposed to a potentially devastating balance effect (be it a deflationary adjustment or a devaluation).

In light of Latin America's experience with the Baker plan during the eighties, an intermediate solution combining financing, fiscal adjustment and domestic devaluation seems to be condemned to failure as the debt overhang hinders investment and the contraction of GDP and debt deflation (Fisher, 1933) unsustainably inflate the debt-to-GDP ratio. This leaves simply two options: monetary and fiscal integration (inside the euro) or monetary and fiscal autonomy (outside the euro).

The resolution of the crisis *inside the euro,* by issuing debt with risk solidarity and creating a fiscal union, would rapidly lead to a sustainable convergence of sovereign credit risk –replicating the convergence during the first decade of the twenty first century which, without institutional support, was the origin of the imbalances within the euro area (Figure 5) – and an explicit role for the ECB as regional lender of last resort, immediately halting any pressure on periphery banks.

Figure 5

THE CONVERGENCE GAME. GREECE AND GERMANY SOVEREIGN SPREADS BEFORE, DURING AND AFTER THE EURO

Source: Bloomberg.

Of course, it is the second case where lessons from Latin America become pertinent. In fact, the *outside the euro* solution would probably involve several of the aspects mentioned earlier: devaluation (in this case, reintroducing a new local currency as legal tender), obligatory conversion of euro liabilities into this new currency, freezing deposits and capital and exchange controls to mitigate the effects of the inevitable bank and exchange run. Based on the precedent of Latin America in the eighties and on the Argentine experiment during the first few years of the twenty first century, it is worth thinking that it would not be the new depreciated currency per se that would reverse the recessive trend of the crisis itself, but the conversion of financial contracts to the new currency and the deleveraging resulting from this conversion that would leave firms and households debt free and ready to invest.

Nonetheless, even here there are differences in importance when comparing experiences. For instance, none of the Latin

American experiences, not even that of Argentina included replacing a legal currency.[25] In fact, there are no precedents of replacing one strong currency for another –as would be the case of an exit from the euro area- destined to depreciate in real terms. As always, lessons are useful for understanding problems but they should only be taken as a guide when defining policies.

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[25] Strictly speaking detailed analysis of Argentina's case reveals that the country experienced a large substitution of assets (dollarization of savings) but not a currency substitution. In the end this allowed monetary policy to be implemented and prevented higher inflation. Moreover, the issuing of quasi currencies (low denomination bonds in convertible pesos issued by national and provincial Treasuries), often hailed as a model for introducing a new currency was actually a vehicle for fiscal financing which by design avoided the likelihood of a devaluation (de la Torre, et al., 2002).

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