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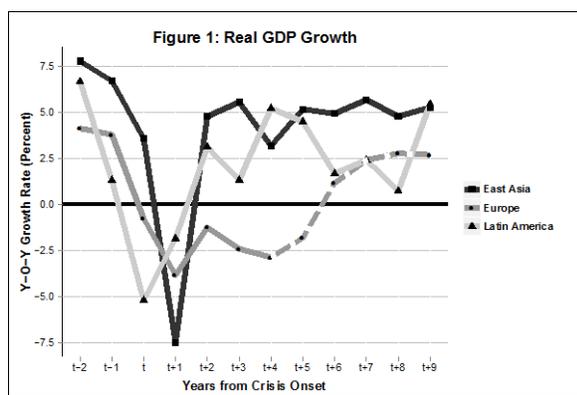
Barry Eichengreen, Naeun Jung, Stephen Moch and Ashoka Mody¹

May 2013

¹ The first author is with the University of California, Berkeley, the others with Princeton University. We thank Carlos de Sousa and Chris Krogslund for assistance. Mody thanks Bruegel for its hospitality while working on this paper.

1. Introduction

The longer the crisis in the Eurozone drags on, the more it looks like the “Lost Decade” in Latin America in the 1980s than the “Phoenix Miracle” of the East Asian countries following their crisis in the 1990s. In Latin America it took nine years for growth to recover sustainably to the levels prevailing prior to the crisis in 1982.² The meantime saw a grinding process of internal adjustment characterized by debt overhang rather than debt reduction. East Asia’s crisis, in contrast, took the form of a v-shaped recession and recovery, with growth falling sharply in 1998, the year following the onset of the crisis, but recovering equally sharply in 1999 to levels nearly as high as before the crisis. The growth of debts was more limited, and exports increased dramatically. Internal and external adjustment was faster.



Source: IMF World Economic Outlook (April 2013), unweighted country averages

The question is which of these predecessors the Eurozone resembles. At first glance, the clear answer in Figure 1 is that Europe is Latin.³ Five years into their crisis the troubled countries of Southern Europe and Ireland continue to contract on average (modest growth in Ireland forecast by the government at 1.5 per cent in 2013 and 2.5 per cent in 2014 not being sufficient to overturn the generalization).⁴ Debts have risen explosively, exports only modestly. With fiscal consolidation making for weak demand at home and inadequate competitiveness together with slow growth in world trade making it hard to substitute demand from abroad, a lost decade would seem to be in the offing. The grinding process of internal adjustment, a la Latin America, to all appearances has further to run.

On delving further, however, one is quick to discover important respects in which the European and Latin American crises differ.⁵ Where much of Latin America’s debt was held by foreigners, much Eurozone debt is held internally by European banks and firms and,

² There had been a brief recovery in 1986-87, as we show below, but it did not last.

³ Data here are simple averages of the country cases enumerated below.

⁴ Private forecasts are less rosy: the most recent *Quarterly Bulletin* of the Nevin Economic Research Institute forecasts growth of just 0.6 per cent in 2013 and 0.8 per cent in 2014.

⁵ Where for ease of exposition we refer to Europe, it should be understood that we are referring specifically to the Eurozone and its crisis countries, in particular.

increasingly, by the European System of Central Banks and other official creditors.⁶ This would seem to make quick recourse to debt restructuring to clear away unsustainable debts easier economically but more difficult politically. Latin American sovereigns, recall, had to wait fully nine years until the advent of the Brady Plan for meaningful debt reduction.⁷ In Greece, in contrast, a first round of meaningful debt restructuring occurred “already” after four years.⁸ Reduction in the burden of official debt was then extended to Ireland and Portugal, although the process has been slow and ad hoc.

In addition, the crisis countries of Latin America were able to depreciate their currencies in the effort to facilitate adjustment, whereas the crisis countries of the Eurozone lack separate sovereign currencies to depreciate. One can question how much of an improvement in competitiveness it was possible for Latin American countries to engineer given the response of wages and other costs to changes in the nominal exchange rate. There, as in East Asia, there was also the adverse balance-sheet impact of foreign-currency-denominated debt, which provided an argument for limiting depreciation. And it is by no means impossible for the euro to depreciate against other currencies as part of the process of external adjustment, although this would take a concerted effort by the European Central Bank, however implausibly given the politics, the central bank’s mandate, and the fact that the Eurozone overall remains in external balance.

This brings us to a third difference between the Eurozone crisis on the one hand and the Latin and East Asian crises on the other. Europe’s crisis countries are members of a regional economic and monetary bloc that confers both obligations and opportunities. In principle, there is scope for not just monetary union but also for banking, fiscal and political union, opening up avenues for resolving the crisis not available in other regions. That said, there remain obstacles to a concerted, Eurozone-wide response to the crisis in practice. Increasingly one worries that it is the obligations and not the opportunities that dominate.

The other obvious comparison useful for placing Europe’s crisis in perspective is with the United States. There is a long tradition of such comparisons.⁹ The U.S. economic and monetary union is said to have higher levels of labor mobility than exist between members of the Eurozone. The federal tax and transfer system provides a degree of automatic insulation from state-specific shocks. And the existence of a single bank resolution mechanism, the Federal Deposit Insurance Corporation, offers a degree of risk sharing when dealing with state-centered banking problems. These differences have been noted before. But they are worth revisiting in light of recent events.¹⁰

⁶ And where much Latin American debt was issued under U.S. governing law and subject to U.S. courts, most Eurozone sovereign debts are subject to domestic law.

⁷ A review of the Brady Plan and debt reduction/restructuring in Latin America is Vasquez (1997).

⁸ Four years if we date the onset of the crisis as 2008, and even earlier if we date its onset with the new government’s acknowledgement of the true fiscal situation at the end of 2009. Whether that debt reduction was adequate is a separate question. We return to this below.

⁹ Tracing back at least to Eichengreen (1990) and even further.

¹⁰ See Blanchard and Katz (1992), Eichengreen (1993), and Sala-i-Martin and Sachs (1992) for examples of this earlier literature.

Crises are complex.¹¹ Sorting out cause and effect is not easy. Real and financial imbalances reinforce one another; it is not always clear what is properly regarded as endogenous and what is exogenous. Market participants look forward; simple timing relationships provide little insight into the nature of events. Structural models are stylized; by assumption, they omit as much of importance as they include. We do not claim to have solved these fundamental methodological problems. But by placing the ongoing Eurozone crisis in comparative context, we hope to shed at least limited light on what is distinctive about this episode and how it has been handled.

2. Crisis and Response

In comparing the 1980s Latin American crisis, the 1990s Asian crisis and the recent European crisis, we focus on the countries at the center of the storm: Argentina, Brazil, Chile, Mexico and Uruguay in the first case; South Korea, Philippines, Indonesia and Thailand in the second, and Greece, Ireland and Portugal in the third.¹² Where outcomes in individual countries deviate significantly from those in the rest of the group, we highlight their distinctive performance. All variables are expressed in “crisis time,” with year t denoting the onset of the crisis. Onset dates from Barkbu, Eichengreen and Mody (2012) are shown in Table 1.

We start by looking more closely at growth and its proximate sources. Figure 2 disaggregates growth across our European cases, highlighting Ireland’s return to positive growth three years into the crisis and showing also the IMF’s most recent forecasts (which, recent data suggest, may have to be revised downward).

Table 1. Timing of Crises

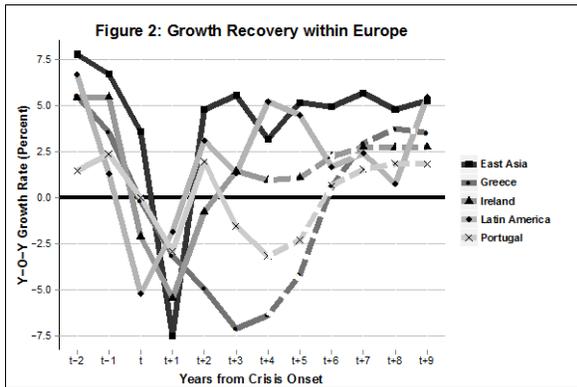
Episode	Country	Date (year t)
Latin Crisis	Argentina	1982
	Brazil	1982
	Chile	1982
	Mexico	1982
	Uruguay	1982
Asian Crisis	South Korea	1997
	Philippines	1998
	Thailand	1997
	Indonesia	1997
European Crisis	Greece	2008
	Ireland	2008
	Portugal	2008

Source: Barkbu, Eichengreen and Mody (2012)

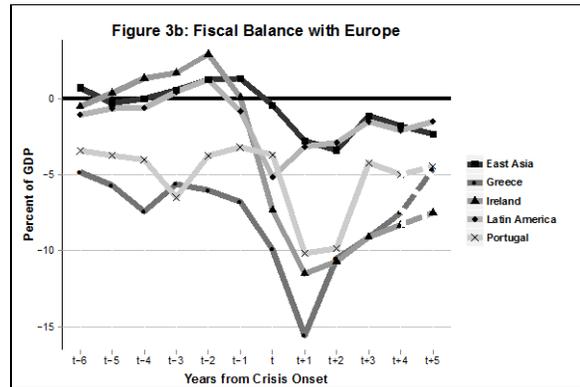
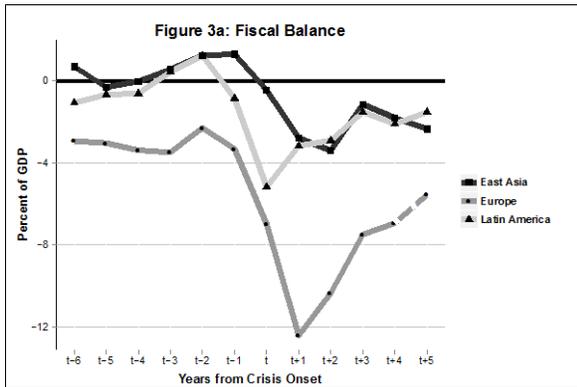
¹¹ A comprehensive recent review of the analytical and empirical literatures is Goldstein and Razin (2013).

¹² In each case it would be possible to extend the list of crisis countries, adding inter alia Malaysia and Hong Kong to the list of Asian cases and Spain and Italy to the European crisis, but doing so would not change the basic story (while further cluttering the figures). Probably the most consequential decision is not to include Spain among the European crisis countries. Where this matters, we report how in what follows.

The most controversial aspect of the European response, without question, has been “austerity,” the name given steps taken to reduce sovereign debts and narrow budget deficits. The left hand side of Figure 3 displays those deficits, scaled by GDP. It indicates that they were largest in the now-crisis countries of Europe even prior to 2008. The Asian countries, in contrast,, did not have overt fiscal problems before their crisis, although with the crisis-induced recession their budgets moved into deficit. Latin American countries had a long history of budget deficits and borrowing, but fiscal performance had been improving in the run-up to the crisis, contrary to the widespread presumption that ready access to external finance always and everywhere fuels government excesses. There is, however, some sign of slippage in Latin American public finances on the eve of the crisis, although there too the major shift toward deficit coincides with (results from) the onset of recession.¹³



Source: IMF World Economic Outlook (April 2013), unweighted country averages



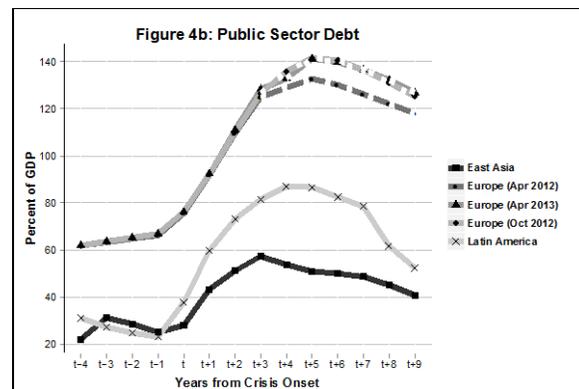
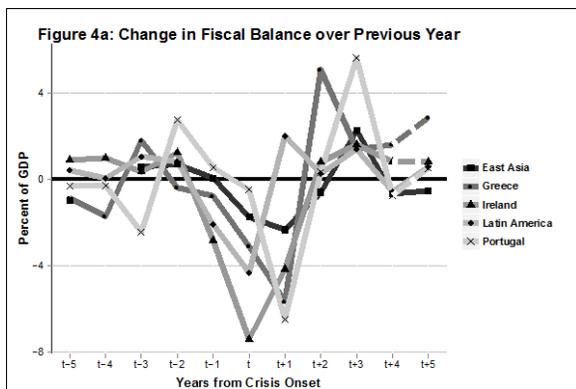
Source: IMF Government Finance Statistics, unweighted country averages

The right hand side of Figures 3 is a reminder of what was special about Europe, namely Greece. Larger deficits in the European crisis countries during the run-up were heavily a Greek phenomenon. Greece had unusually large deficits from 2006 (actually, all through the preceding

¹³ See Figures A.1 and A.2 in the appendix for cyclically-adjusted deficits.

decade), although it had company in the form of Portugal. Ireland on the other hand was running surpluses before the crisis.¹⁴ One can of course question the precision and meaning of these fiscal numbers. Greek deficits prior to 2009 may have been understated by window dressing, and the new government of George Papandreou may have even overstated the deficit for 2009 in order to strengthen the case for a bailout.¹⁵ Similarly, Irish and Spanish surpluses prior to 2007 may have reflected unsustainable housing and economic booms that pumped up tax revenues while understating the contingent liabilities that fell due when the time came to nationalize and recapitalize the banks. Be that as it may, it is impossible to deny the existence of pronounced fiscal heterogeneity in Europe. In some cases there were significant fiscal excesses and imbalances before the crisis. In others, deficits mainly resulted from the crisis and the failure of governments to provision for it adequately.¹⁶

Once the crisis struck, very large deficits opened up across Southern Europe.¹⁷ The left hand side of Figure 4 shows that these were met with unusually large fiscal adjustments. After deteriorating by an unusually large amount in the crisis, the extent of fiscal consolidation first in Greece in 2010 and then in Portugal in 2011 stands out. Latin America appears to have begun its fiscal adjustment earlier, although that pattern is an artifact of our convention of dating the onset of the European crisis as 2008.¹⁸ Latin American countries narrowed their budget deficits sharply when the crisis struck, and Asian countries pursued budget-cutting measures first to satisfy conditions imposed by the IMF and then in a voluntary effort to further bullet proof their economies by reducing internal and external debt. The magnitude of fiscal consolidation in Asia and Latin America is impressive, but its extent pales in comparison with Europe.



Source: IMF Government Finance Statistics, IMF World Economic Outlooks (April 2012, October 2012, April 2013), unweighted country averages

¹⁴ Data for Spain would show the same pattern. More precisely, Spain's budget balance looks like Ireland's before the crisis and like Portugal's thereafter.

¹⁵ This is separate from the court case over whether the Hellenic Statistical Service overstated the deficit in 2010, a controversy that we certainly do not wish to wade into here.

¹⁶ "Failure...to provision for it adequately" meaning that governments ideally would have run still larger surpluses prior to the crisis.

¹⁷ For ease of exposition we refer to Ireland as an honorary member of Southern Europe throughout.

¹⁸ The dating is disputable: the failure of important European hedge funds, the IKB rescue and then loss of access by European banks to the wholesale money market all occurred in the summer of 2008. But the first glimmerings of a crisis of debt sustainability surfaced only in late 2009.

The advisability of these policies is disputed, to put the point in the most anodyne possible way. To the extent that the policies in question have a rationale, it is grounded in Europe's relatively heavy burden of public debts, which raises questions of sustainability. While we will not be able to adjudicate this dispute here, we can at least shed some light on it by placing Europe's public debt burden in comparative perspective. The right hand side of Figure 4 shows public-debt/GDP ratios for the European crisis countries (with IMF forecasts at different points in time for the period going forward) together with comparable debt ratios for Latin America and Asia.¹⁹ Europe's much heavier public debt burden is clear; note, moreover, that project debt ratios rose even as fiscal consolidation efforts were underway. Asia's debts were concentrated more heavily in the corporate and financial sectors, which is not to say that they were inconsequential, only that they could be restructured in domestic bankruptcy courts. In Latin America, debts began rising as rapidly as in Europe with the crisis, but from lower levels, something that arguably rendered the urgency of consolidation less.

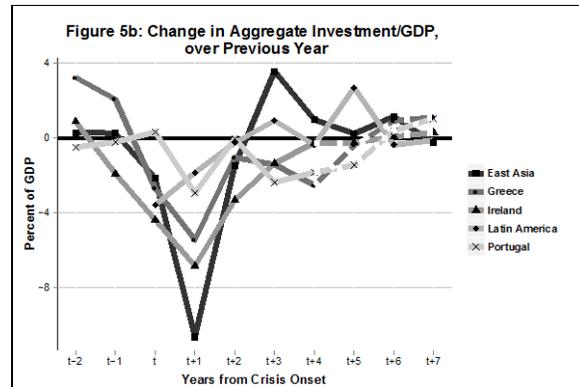
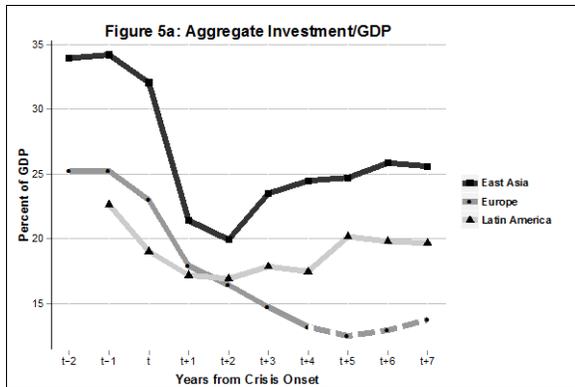
As will now be anticipated, Europe has seen no compensatory increase in private spending. The most volatile and forward-looking component of spending, as always, is investment, which slumped in all three crises. The sharpest fall is actually in the Asian crisis (left hand panel of Figure 5). In a number of Asian countries, investment had been boosted to unsustainably high levels (in construction in Thailand, in industrial capacity in Korea). This is an early indication that current account deficits associated with high investment as opposed to low saving are not always benign. Much depends on quality and on the returns on the investment in question.²⁰ The same problem would become evident in Ireland and Spain, where much investment during the boom was in residential property and related activities that did little to boost productivity or generate positive returns.²¹ In Asia investment then ratcheted down from 35 to 20 per cent of GDP, overshooting slightly following the onset of the crisis.²² But investment growth was again positive within two years of the crisis, helping to drive Asia's Phoenix Miracles (right hand panel of Figure 5). In Latin America, in contrast, investment rates remain unchanged across the crisis, although there is an extended dip following crisis onset. But even there the rate of change in investment was back in positive territory within three years. Nothing comparable is evident in Europe's crisis countries. Instead one sees a deep and extended investment slump. Investment will soon show signs of bottoming out at extremely low levels if IMF forecasts are to be believed. But the investment collapse in Europe is extraordinary even by Latin American standards.

¹⁹ It may be more appropriate to scale Irish debt by GNP rather than GDP, given how the GDP figures are inflated by the tendency for multinational corporations taking advantage of low corporate profit tax rates to book their profits there but not to pay much in the way of taxes – taxes being the relevant metric for debt sustainability. Alternatively, it has been suggested that Irish public debt is appropriately scaled by a weighted average of GDP and GNP (placing perhaps a 40 per cent weight on GDP, this according to the Irish Fiscal Council). We have constructed comparable figures using this weighted average; doing so makes little difference for the overall picture.

²⁰ The notion that current account deficits associated with high investment are not a problem is known as the Lawson Doctrine after Prime Minister Thatcher's chancellor Nigel Lawson.

²¹ Including Spain would place Europe's post-crisis investment performance in a slightly more favorable light, since the country has experienced an investment decline but not an investment collapse (to date).

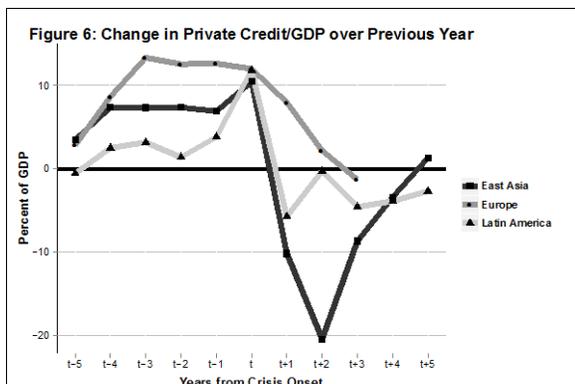
²² The point has been emphasized previously by, inter alia, IMF (2005).



Source: IMF World Economic Outlook (April 2013), unweighted country averages

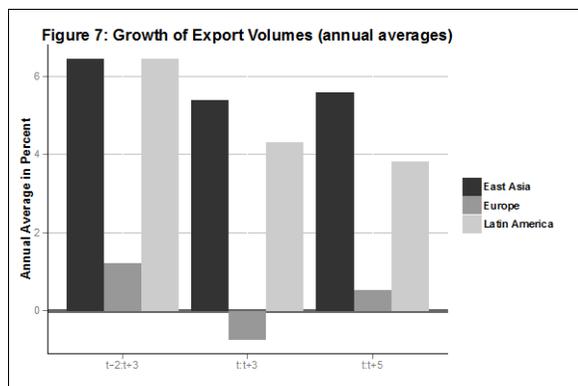
Investment reflects as well as shaping the overall state of the economy, but in addition it is importantly affected by bank credit flows and their availability. Figure 6 depicts the credit booms affecting each of our economies in the run-up to their crises. Crises are regularly preceded by credit booms, and these episodes are no exception. Interestingly, the credit boom in Europe is, if anything, slightly less pronounced than those in Asia and Latin America.

In each of our three episodes the crisis then significantly disrupted the provision of bank credit to the private sector. But whereas in both Asia and Latin America the growth of domestic credit to the private sector turned negative within a year, in Europe it took three years for the rate of growth of private credit to go negative. This could reflect forbearance on the part of European regulators. In a number of Asian countries, South Korea for example, problem banks were quickly shut down or forced to merge with stronger competitors; in Europe, in contrast, bad banks were generally kept afloat, a practice which kept credit flowing to the private sector in the short run, albeit at the cost of storing up problems for the future. The contrast could also reflect the operation of the TARGET2 system, through which the European System of Central Banks provided credit to, inter alia, the Bank of Greece, which the latter passed on to the commercial banks, helping to sustain their lending. At this point there is no question that Europe is in the throes of a full-fledged credit crunch. Even if, compared to Asia and Latin America, the onset of the crunch was delayed, this does not bode well for the recovery of investment.



Source: World Bank Databank, unweighted country averages

Where domestic demand is weak, the hope is that external demand will take up the slack. As Figure 7 shows, although the growth of Latin American exports slumped with the onset of the debt crisis in 1982, they quickly moved back into positive territory. The continued growth of exports even in the worst days of the crisis to a considerable extent accounts for the success of the Asian countries in mounting such a rapid recovery from their crisis.²³ The slump in export growth in Europe is more pronounced. Ireland and Portugal, if not Greece, are widely regarded as success stories from this point of view, with export volumes now expanding strongly in both cases. Our comparative perspective suggests that export growth was inferior to that in previous crises.²⁴

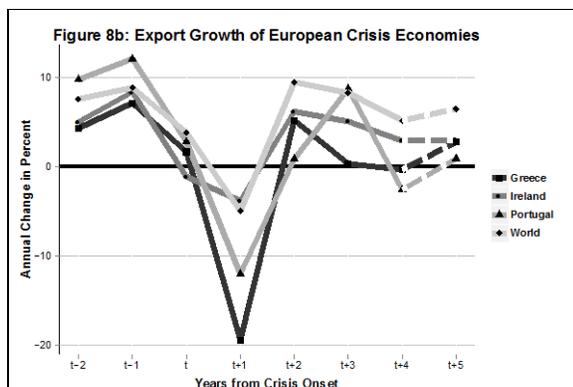
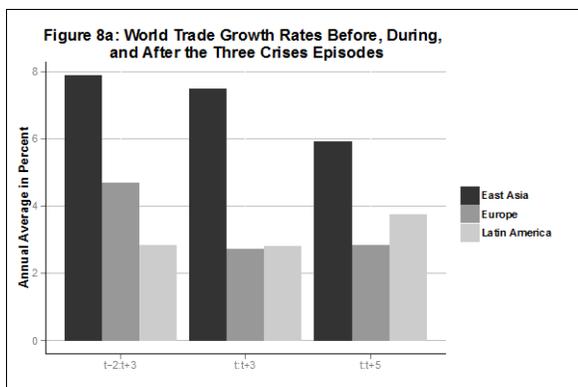


Source: IMF World Economic Outlook (April 2013), unweighted country averages

Asia benefited from a relatively strong external environment in the immediate wake of its crisis. The world economy was continuing to expand, driven by Chinese reform and the dotcom boom in the United States. The role of external factors in the Asian export response is evident in Figure 7, which shows export volumes turning negative in 2001-2, coincident with the recession in the U.S. The left hand panel of Figure 8 looks at the growth of world demand for traded goods directly, confirming the extent to which external conditions following the Asian crisis stand out. It is clear from Figure 8 that external conditions have mattered importantly for the export performance of Europe's crisis countries

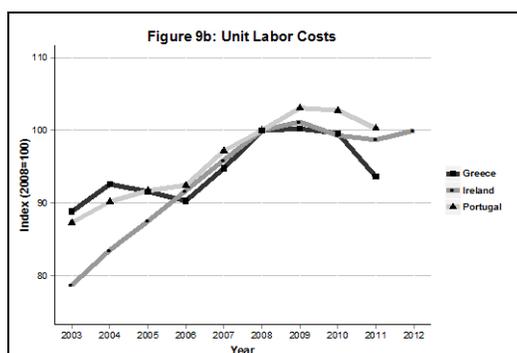
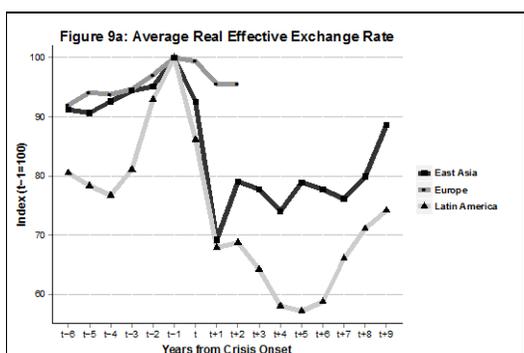
²³ Interestingly, the literature on the export response to the Asian crisis (Dutttagupta and Spilimbergo 2000) focuses on why exports did not expand even more rapidly, where hypotheses focus on the price inelasticity of external demand and the domestic credit-market disruptions referred to above. A comparative perspective places Asian export performance in a more positive light. There is also the caveat that export volumes expanded more rapidly than export receipts, as the increase in volumes was achieved in part by real devaluation reducing the relative price of the region's goods. But this does nothing to denigrate the positive output and employment effects of Asia's export adjustment.

²⁴ Higgins and Klitgaard (2013) consider exports in current (euro) terms and scale the growth countries' exports by the growth of their trading partners' imports. As they note, Spain and Portugal have done reasonably well on this metric in recent years, having seen their exports grow 6 to 8 percent faster than trading partners' imports in 2010-12. They then note how this matches up well with Germany export performance insofar as the country's exports grew 5 percent faster than trading partners' total imports. Italian exports, by comparison, evolved less positively; they just kept pace with imports in the country's destination markets. Greece lost significantly market share over the same period, with exports growing 10 percent more slowly than the imports of destination markets.



Source: IMF World Economic Outlook (April 2013), unweighted country averages

But the major difference underlying the divergent behavior of export volumes, as Figure 9 makes clear, was the real exchange rate response.²⁵ Asia and Latin America saw significant real depreciation already in the year of the crisis as a result of immediate currency devaluation. What was mourned at the time as the collapse of currency pegs now appears in a more favorable light. Europe's crisis countries, without a national exchange rate to devalue, saw no real exchange rate improvement when the crisis broke and experienced excruciating slow adjustment thereafter. Adjusting for changes in productivity, as on the right-hand side of Figure 9, places Europe's, and especially Greece's, adjustment in a somewhat more favorable light, but only slightly. There is, moreover, the important possibility that much of this apparent adjustment is an illusion insofar as it reflects compositional effects, that low skilled workers in less productive sectors are being consigned to unemployment, and that productivity will decline (unit labor costs will increase) once the downturn comes to an end. O'Rourke and Taylor (2013) report that the increase in gross value added per hour in the Irish business sector between 2008Q1 and 2011Q4 falls from 15.1 per cent to 2.5 per cent once this compositional shift is taken into account.²⁶ Be that as it may, the comparison with Asia and Latin America points up the costs of monetary union in the aftermath of crisis.



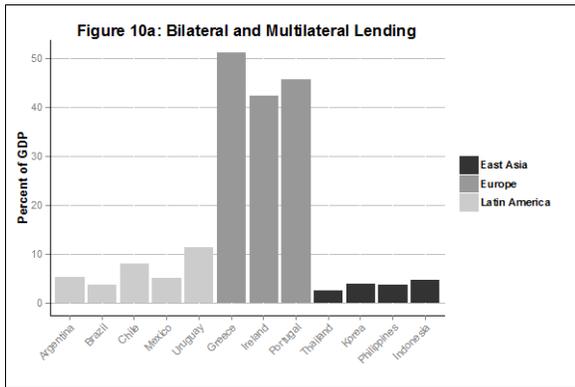
Source: Bruegel

Source: Eurostat

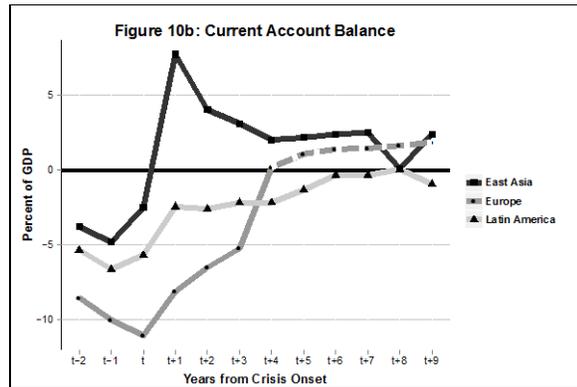
²⁵ Pisani-Ferry, Sapir, and Wolff (2013) also highlight the crucial importance of the real exchange rate.

²⁶ Looking not just at the business sector but at the total economy including agriculture, construction and real estate, there was essentially zero change in unit labor costs over the period when compositional changes are taken into account.

The benefit of monetary union lies in principle in the solidarity of its members. That solidarity comes through in the extent of official assistance, shown in the left hand side of Figure 10. Bilateral and multilateral assistance to Greece, Ireland and Portugal through the European Financial Stability Facility/European Stability Mechanism and the IMF puts multilateral assistance to the Latin American and Asian crisis countries in the shade. That assistance is why the European crisis countries have been able to continue running substantial current account deficits despite the crisis. In addition, it should be noted that the rapid Asian compression thereafter was essentially a decision to shift the current account into surplus in order to accumulate international reserves, balance-of-payments flows being perceived as the main source of vulnerability that had been revealed by the crisis (Aizenman and Marion 2003).²⁷



Source: Barkbu et al. (2012); Seitz & Jost (2012)



Source: IMF World Economic Outlook (April 2013), unweighted country averages

3. Property Boom and Bust

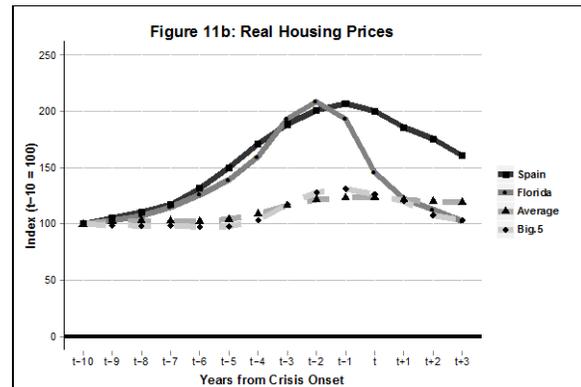
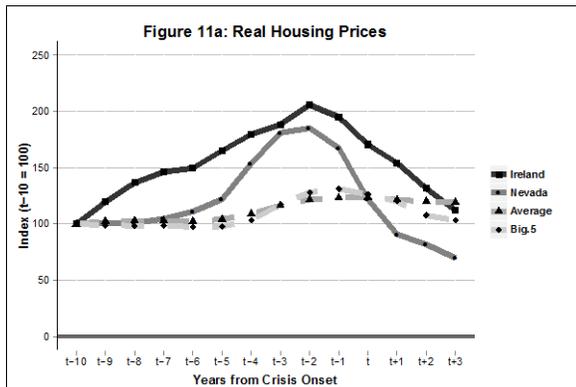
While skeptics of the monetary-union project had worried about asymmetric supply and demand shocks of various sorts, it is fair to say that the possibility of regionally-concentrated and therefore asymmetric property booms and busts were not high on their list of worries. With hindsight, this is peculiar. Once of the most visible consequences of monetary unification – indeed, one of its intended consequences – was the downward convergence of nominal interest rates in previously high-interest-rate economies toward the lower levels on safe assets like German *bunds*. It follows that interest-rate-sensitive forms of activity in these economies, such as housing construction, should have been disproportionate stimulated by monetary union. That housing booms were also affected by the structure of mortgage finance, land-use regulation, and oversight of the financial-services industry does not alter the point. Then there is the fact that even in highly integrated economic and monetary unions like the United States, where regional interest rates have long since converged and labor is relatively mobile, real estate booms tend to be highly concentrated, again causing their effects to be asymmetric. The key point, in any case,

²⁷ Surpluses were also desired in order to pay back debt to the IMF as quickly as possible.

is that the affected U.S. states had available to them mechanisms for coping with the consequences not also available in Europe.

But hindsight is 20/20. This was not a phenomenon to which much attention was paid prior to the crisis. Figure 11 contrasts the housing boom in Ireland with that in Nevada, with data for both centered on 2008, and the housing boom in Spain compared with that in Florida, again centered on 2008. The scale of the respective economies is not entirely dissimilar: Nevada with a population of 2.7 million versus Ireland with 4.5 million, Florida with a population of 19 million versus Spain with 47 million. Neither are per capita GDPs that dissimilar: \$39,000 for Florida versus \$32,000 for Spain, and \$37,000 for Nevada versus \$48,000 for Ireland (where this last figure may be exaggerated by the GDP/GNP distinction alluded to above).²⁸ For further comparison we also include Reinhart and Rogoff’s (2008) 18 bank-centered crises (denoted “average,” centered on their respective crisis years), and their “Big 5” crises (Spain in 1977, Norway in 1987, Finland in 1991, Sweden in 1991 and Japan in 1992).

Even in comparison with other bank-centered crises, the crises in Ireland, Spain, Nevada and Florida were clearly of an entirely different magnitude. In the 18 other bank-centered crises and even the Big 5, the movement of housing prices was not as pronounced. In Ireland, the run-up in real housing prices began unusually early compared to the other three states. In Spain, downward adjustment following the peak has been unusually slow, as banks and mortgagees have been slow to realize losses. Overall, however, the similarities are striking.



Source: Federal Housing Finance Agency, European Central Bank

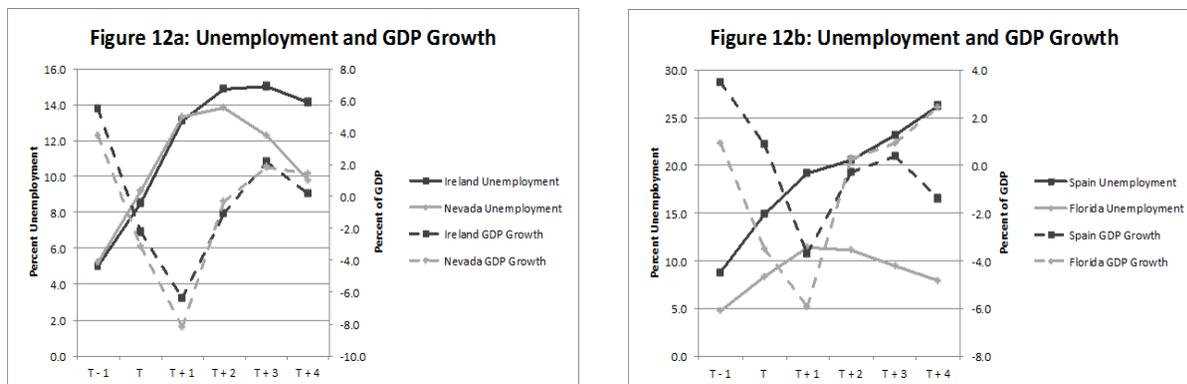
4. Adjustment Mechanisms

This comparison of Nevada and Florida with Ireland and Spain can be used to shed light on differences in adjustment mechanisms in the U.S. and Europe. The literature emphasizes the greater mobility of U.S. workers in response to asymmetric shocks, America’s well-developed federal fiscal system, and its possession a bank resolution mechanism at the level of the monetary union. Our take is different. While we agree with the emphasis on the importance of federal taxes and transfers in the United States, we place relatively less weight on migration and

²⁸ See footnote 19 above.

the mutualization of bank resolution costs and more on changes in labor-force participation and bank mergers and acquisitions in the adjustment mechanism

The housing busts in question had similar consequences for unemployment initially. Figure 12 compares unemployment in Ireland and Nevada in the left-hand panel and in Spain and Florida on the right. Unemployment in Spain starts from an unusually high level, as is well known. But, beyond that, the parallels are striking.



Source: Eurostat, Bureau of Labor Statistics

But that there are differences in the adjustment mechanism is betrayed by the fact that unemployment rates diverge markedly two-plus years into the crisis. While unemployment in Nevada and Florida heads back down, in Ireland it only flattens out, and in Spain it continues to rise. This divergence is widely attributed to differences in labor mobility.²⁹ More workers left Florida and Nevada for other states with superior prospects than left Ireland and Spain, it is said; this inference is drawn on the basis of trends in employment growth (if unemployment came down but employment growth remained relatively stagnant, then there must have been outmigration).

Data on migration in fact paint a more complex picture. While it is true that gross migration rates are higher across U.S. states than European countries, net migration rates are not that different. Moreover, migration rates in the U.S. have been falling (reflecting various factors including housing problems – see Frey 2009), while those in Europe have been rising. About 2 percent of the population in the U.S. typically resided in another state in the previous year (Table 2). But this figure has come down over time and shown a further decline with the crisis.³⁰ Nevada had higher than average migration rates, with about 4 percent of state population leaving (emigrating) each year and new arrivals (immigrants) coming in at almost the same rate. Nevada had small net immigration before the crisis and small net emigration after the crisis started. For

²⁹ Blanchard and Katz (1992) is the classic reference. Recent interpretations of labor market developments with a similar emphasis include inter alia Krugman (2013).

³⁰ Kaplan and Schulhofer-Wohl (2012) show that the fall is exaggerated by the published data but is real nevertheless; in Kaplan and Schulhofer-Wohl (2013) they conclude that economic structures across states have become more similar, reducing the incentive for migration.

Florida gross rates are somewhat lower but once again much larger than net rates. Florida actually shifted from net outflows to net inflows following the onset of the crisis. Given the relatively small size of net migration rates in and out of Nevada and Florida, it is clear that adjustment in these two states did not occur through significant net outflows of residents in these distressed states.

Table 2. Annual Migration as Share of Population (%), U.S. and Selected States

		2007	2008	2009	2010	2011
	Emigration	4.3	3.9	4.2	4.0	4.3
	Immigration	5.0	4.5	4.0	3.8	4.1
	Net migration	0.7	0.6	-0.1	-0.2	-0.2
Florida	Emigration	2.9	2.7	2.4	2.3	2.3
	Immigration	2.7	2.6	2.5	2.6	2.6
	Net migration	-0.2	-0.1	0.1	0.3	0.3
United States	Gross Migration	2.5	2.4	2.2	2.2	2.2
	Net migration	0.28	0.22	0.19	0.19	0.17

Source: United States Census Bureau and author's calculations

Note: Net migration for the United States is estimated following Kaplan and Schulhofer-Wohl (2013), as the sum of the absolute value of each state's emigration minus immigration divided by two in the numerator and the population at the start of the year in the denominator.

This is not to deny that gross migration rates are lower in Europe, as previous analysts have observed. Even Ireland, with a tradition of migration, has significantly lower gross flows than Nevada. But because European migration tends, at a particular time, to be mainly in or out, despite lower gross rates European net rates are of the same order of magnitude as in the United States—typically in the range of ¼ to ½ percentage points of population. The more prosperous countries were losing people to the periphery before the crisis; although they became net recipients of migrants after the crisis, the total number of migrants from the distressed periphery to European destinations with better job opportunities – some 60,000 in 2011– was small, on average, less than 1/5th of a percentage point of the population of a peripheral economy. .

Somewhat more significant, in fact, is migration from the Eurozone periphery to the rest of the world. In keeping with Ireland's tradition of relative large gross migration rates, many Irish left for Australia and Canada. While inflows into Ireland dropped sharply, they remained significant: thus, the total net annual emigration rate (to all countries, rather than only to the Eurozone core, in the twelve months to April 2012 was about ¾ percent of the population, according to preliminary estimates of the Central Statistics Office of Ireland (CSO, 2012). These are large numbers by the standards of U.S. states.³¹

³¹ Migration to non-Eurozone destinations is also on the rise from other peripheral nations. Thus, residents of Portugal are reported to be leaving for Switzerland, Angola, and Mozambique in substantial numbers.

Gross migration may be important in its own right, of course. It can facilitate outflows from professions with weak job prospects while at the same time bringing in new residents to jobs where the opportunities are more plentiful. Construction workers could be flowing out while time, health care workers are flowing in. But this does not appear to be a big part of the story.

A more significant source of labor-market adjustment, in our view, has been through the reduction in labor force participation rates. If employment growth in Nevada and Florida has been relatively slow in the face of falling unemployment, the difference is made up not so much by migration as by changes in the labor force participation rate, necessarily by process of elimination. Table 3 shows that Nevada and Florida in fact experienced more rapid declines in labor force participation than the country as a whole. Labor force participation in the two states fell by 1.3 percentage points more than the national rate. Evidently, their high levels of unemployment led people to stop looking for work in relatively large numbers. This paints U.S. experience in a less flattering light.

Table 3: Mechanisms of Labor Market Adjustment

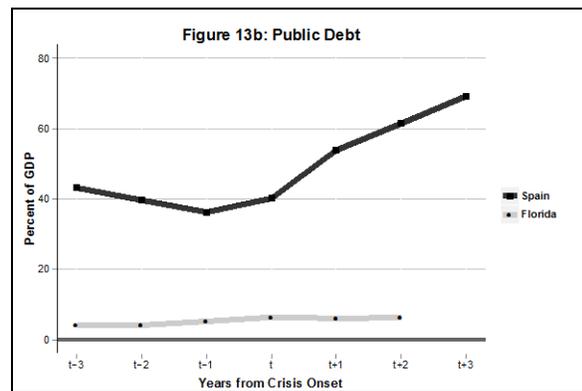
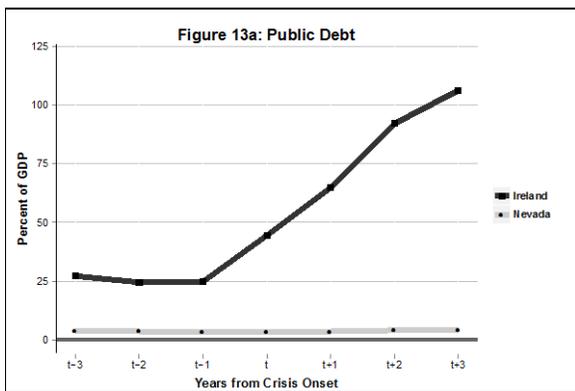
	2007	2008	2009	2010	2011	2012
Florida						
Unemployment Rate	4.7	8.3	11.4	11.1	9.4	7.9
Labor Force Participation Rate	64.2 (66.0)	63.1 (65.8)	61.9 (64.6)	61.1 (64.3)	60.7 (64.0)	60.5 (63.6)
Net Immigration Rate	-0.2	-0.1	0.1	0.3	0.3	N/A
Nevada						
Unemployment Rate	5.2	9.2	13.3	13.8	12.3	9.8
Labor Force Participation Rate	67.6 (66.0)	68.7 (65.8)	68.7 (64.6)	66.8 (64.3)	65.7 (64.0)	63.9 (63.6)
Net Immigration Rate	0.7	0.6	-0.1	-0.2	-0.2	N/A
Spain						
Unemployment Rate	8.8	14.9	19.2	20.5	23.2	26.2
Labor Force Participation Rate	72.5	73.4	73.3	73.6	73.8	74.0
Net Immigration Rate with Europe	0.7	0.3	0.2	0.1	0.0	N/A
Total Net Immigration Rate	1.64	1.01	0.38	0.14	-0.11	N/A
Ireland						
Unemployment Rate	5.0	8.5	13.1	14.9	15.0	14.1
Labor Force Participation Rate	74.9	74.5	72.6	72.6	70.5	70.7
Net Immigration Rate with Europe	N/A	0.10	-0.42	-0.43	-0.32	N/A
Total Net Immigration Rate	1.07	0.08	-0.63	-0.76	-0.74	N/A

Sources: United States Bureau of Labor Statistics and Eurostat.

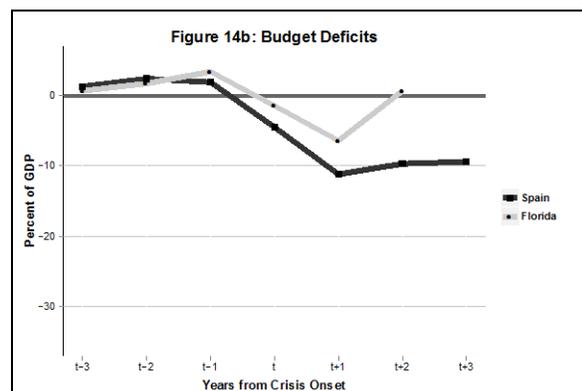
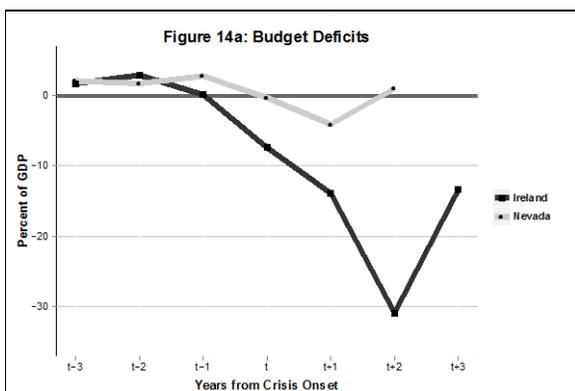
Note: The figures in parentheses are the averages for the United States as a whole.

Ireland has also had a large reduction in labor force participation: thus unlike in Spain, where the brunt of the adjustment has been through increased unemployment, Irish unemployment rate is flattening because of more emigration and but also because of a larger fall in participation rates. In contrast, the two U.S. states have experienced a combination of lower unemployment rates with lower labor force participation rates with little contribution from net migration.

Neither Nevada nor Florida has public debt and deficit problems comparable to those of troubled European sovereigns (Figures 13-14). Their public debts entering the crisis were limited, reflecting the mobility of the tax base, which limits the ability to levy taxes at rates significantly above those of neighboring states, resulting in healthy tax competition and relatively small state government, together with balanced budget statutes and amendments further limiting the accumulation of debts. But states have considerable leeway to define balance as they choose. Nevada, for example, is permitted to carry over a deficit into the next fiscal year. It is allowed to spend more than it takes in from revenues by running down its rainy day fund. In fiscal year 2013, its revenue shortfall as a share of the budget was the single largest of any state.³² But the fact that the state budget is small meant that the increase in the deficit was limited. U.S. states have nothing that begins to approach the debt loads of European sovereigns. The less positive way of putting the point is that the degree of automatic stabilization provided by U.S. state budgets is less.



Source: US Census Bureau, Eurostat



Source: Eurostat, U.S. Census Bureau

³² See Oliff, Mai and Palacios (2012).

An important difference is the extent of inter-state transfers. Net federal transfers to Nevada averaged \$20 billion annually during the crisis, dwarfing the state government's \$2 billion average deficit and accounting for a significant fraction of its \$130 billion GDP. This is an order of magnitude greater than comparable transfers within Europe (scaled by GDP).³³ Automatic transfers flowing through the U.S. fiscal system offset 10 to 30 per cent of fluctuations in state income, depending on whose estimates one prefers (Sala-i-Martin and Sachs 1992, von Hagen 1992). A U.S. government not constrained in its ability to borrow, courtesy of possession of its own national currency, was further able to launch the American Recovery and Investment Act (ARRA) in 2009, providing additional aid to the states. Roughly a third of ARRA spending took the form of substituting federal for state spending or providing direct stabilization funds to the states.³⁴ The state government of Nevada, for example, received \$2.7 billion in direct aid, Medicaid assistance and discretionary transfers as a result a result of the legislation.³⁵

Figure 15 shows the swing in net federal taxes (taxes minus transfers) as a share of GDP for Nevada and Florida, using data from the Internal Revenue Service and Bureau of Economic Analysis.³⁶ These show swings on the order of a cumulative 30 per cent of state GDP (consistent with Sala-i-Martin and Sachs' estimates). For Nevada the swing is somewhat larger, presumably reflecting discretionary ARRA funding and the exceptional decline in state GDP.

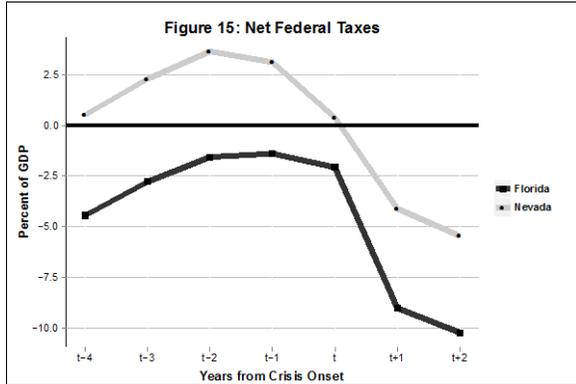
³³ Official transfers to the European crisis countries through the European Financial Stability Mechanism, the European Stability mechanism, EU governments and TARGET2 accounted for a substantial share of the gross domestic product of the recipients: Acominotti and Eichengreen (2013) put these at roughly 7 per cent and 12 per cent of GDP for Greece, Ireland, Italy, Portugal and Spain in 2010 and 2011, respectively. While these are impressively large numbers, they are a small relative to GDP by the standards of Nevada.

³⁴ See Blochliger et al. (2010).

³⁵ Recovery.gov:

http://www.recovery.gov/Transparency/RecoveryData/Pages/RecipientReportedDataMap.aspx?stateCode=NV&PR_OJSTATUS=NPC&AWARDTYPE=CGL.

³⁶ The Tax Policy Center and the Center on Budget and Policy Priorities similarly use, in analogous calculations, gross tax collections by the IRS (including corporate income taxes, individual income/employment taxes, estate taxes, gift taxes, and excise taxes). Thus, we use the most comprehensive spending measure and most comprehensive taxation measure. Certain other commentators take federal spending data from the Census Bureau's Consolidated Federal Funds Report, rather than its Report on State & Local Government Finance. The former tracks all federal monies given to any person, group, or government residing within a particular state, whereas the latter only tracks money given directly to state governments. These figures are thus less comprehensive. As one can see in the graphs and dataset (attached) the results do change a bit. Pre-crisis, Florida is a net recipient and Nevada is a net contributor. Post-crisis, both are net recipients. Throughout the time period, Florida and Nevada differ in the net tax burdens by about 5 per cent of GDP.



Source: Census Bureau, Internal Revenue Service, and Bureau of Economic Analysis

Nevada and Florida also received help in righting their banking systems through the Federal Deposit Insurance Corporation.³⁷ In the first instance, of course, the FDIC is funded by fees paid by banks and thrift institutions for FDIC insurance coverage. But the costs are passed on to shareholders and depositors in some proportion. The point is that those shareholders and depositors are almost entirely residents of other states. And, in the extreme, the FDIC is backstopped (it would be made whole in the event of excessive losses) by the federal government.

But one should be careful not to overstate the assistance received through this channel. Assets of banks closed are not the same as assistance received. Table 4 shows that the cumulative losses of banks resident in Nevada absorbed by the Federal Deposit Insurance Corporation in 2008-2011. This was 2.2 percent of Nevada GDP.³⁸ The ratio was even smaller for Florida. Other fiscal flows, as summarized in Figure 16 above, were considerably more important.

³⁷ In addition, the federally-sponsored housing entities Freddie Mac and Fannie May insured mortgages on homes in default in Nevada and Florida, disproportionately booking losses on insurance on property there and in the other Sand States. Fannie and Freddie sustained more than \$13 billion of losses on insured property in Nevada, due to charge-offs and foreclosures, in the course of the crisis. Federal Housing Finance Agency, Conservator's Report on the Enterprises' Financial Performance, Second Quarter 2012, <http://www.fhfa.gov/webfiles/24549/ConservatorsReport2Q2012.pdf>. Some of the underlying liabilities were held outside the state (through the magic of mortgage securitization), but it is likely the banks in Nevada retained more than their pro-rata share. Thus, the federal government and residents of other states ultimately had to make good Fannie and Freddie's losses.

³⁸ Note that this figure is much smaller than that reported by Gros (2012).

Table 4. Bank Failures and Estimated Losses, Nevada, Florida and United States

	State	Number of bank failures	Estimated losses (USD bn)	Estimated losses over GDP (%)	Total assets involved (USD bn)*	Total assets over GDP (%) *
2008	NV	3	1.7	1.3	5.4	4.1
	FL	2	0.2	0.0	0.5	0.1
	US	25	20.2	0.1	64.9	0.5
2009	NV	3	0.7	0.6	1.9	1.5
	FL	14	9.0	1.3	20.5	2.8
	US	140	38.7	0.3	169.7	1.2
2010	NV	4	0.4	0.3	1.1	0.9
	FL	29	2.5	0.3	11.8	1.6
	US	154	17.5	0.1	73.2	0.5
2011	NV	1	0.0	0.0	0.1	0.1
	FL	13	0.8	0.1	4.2	0.6
	US	92	7.9	0.1	34.9	0.2
Total 2008-2011	NV	11	2.9	2.2	8.5	6.4
	FL	58	12.5	1.7	37.0	4.9
	US	411	84.4	0.6	342.7	2.4

* Excludes Washington Mutual Bank, as discussed in the text.

** Only bank failures are included, not bank assistances.

Source: FDIC and authors' calculations.

Neglected by comparison has been the role of cross-state mergers and acquisitions. Washington Mutual Inc., resident in Nevada, was owner of Washington Mutual (WaMu) Bank, the largest savings and loans association in the United States. The failure of WaMu Bank was the largest bank failure in U.S. history. Intervention did not result in any cost to the FDIC. With creditors and equity holders subjected to large losses, WaMu was sold to J.P. Morgan, and the parent WaMu filed for bankruptcy.

Two implications follow. First, a deposit insurance agency with deep pockets is a critical feature of a bank resolution process. Second, such an agency, like the FDIC, should have well-developed processes for writing down claims on failed banks and transferring the viable residue to new ownership. This process supports the broader integration of U.S. financial markets. Integration takes place not just through narrow differences in borrowing rates across states (as was true before the crisis struck in the Eurozone) but also through integrated ownership.

5. Assessment

Comparisons with Latin America after 1982 and East Asia after 1997-8 underscore the chronic nature of Europe's crisis and disappointing – indeed, so far nonexistent – recovery. The Eurozone is underperforming even by the standards of Latin America's lost decade, this

according to the IMF's October 2012 *World Economic Outlook* forecasts, which are all but certain to be revised downward going forward.

The explanation for this dismal outcome, like the explanation for any crisis, is complex. If we were forced to limit our answer to ten words, they would be “austerity, difficulty of adjustment, chronic banking problems, and debt overhang.” The afflicted countries entered the crisis with heavy public debts compared to Latin America and East Asia. This constrained or was perceived as constraining their fiscal choice set. Fiscal consolidation as measured by the change in the deficit relative to GDP was large even by East Asian and Latin American standards. That there was a sharp political backlash in East Asia against the fiscal consolidation measures demanded by the IMF starting in 1997, despite the fact that the required change in fiscal stance was actually quite a bit smaller, helps to put the extent of Europe's consolidation in perspective.

The negative effects of austerity have been compounded by the difficulty of adjustment. The obvious instance, which we emphasize in Section 2 above, is the inability of the crisis countries to adjust cost competitiveness and boost exports by adjusting the exchange rate, since they have possess no national exchange rate to adjust. Internal devaluation is painfully slow, as the comparisons with both Latin America and East Asia make clear. In Europe, as a result, export performance is weaker. While the crisis countries have made some modest progress in growing their exports, most of their current account adjustment has come about by compressing import demand – as a result of recession, in other words.

Another dimension of the same problem is the absence of monetary policy adjustments to help offset the contractionary effects of fiscal consolidation Eurozone wide. When interest rates are at or near the zero lower bound, contractionary fiscal policy will be even more contractionary because of the limited ability of the central bank to undertake offsetting adjustments. The Eurozone is special in that interest rates are not (yet) quite at the zero lower bound. Yet the reluctance of the European Central Bank to cut them further and to more aggressively pursue unconventional monetary policies – whether because of its narrow mandate, prevailing monetary ideology, or the political flack it has felt as a result of earlier monetary initiatives like its Outright Monetary Transactions – results in the same consequences.

The importance of this second dimension of adjustment is underscored by the fact that it is not only export performance that is weaker in Europe than in Latin America and East Asia; the same is true of private consumption, public consumption and investment alike. Especially alarming in our view is the deep and extended slump in investment spending. That slump is all the more striking given the extent of forbearance by bank regulators and the fact that bank credit to the private sector held up relatively well through the initial phases of the crisis. This earlier forbearance may now be returning to haunt European policy makers; absent measures to radically restructure the banking system, as in South Korea and elsewhere in East Asia in the late 1990s, and to quickly recapitalize the banks, as in the United States after 2008, domestic credit to the private sector continues to decline, dragging down investment spending with it. This problem has been met with special initiatives in various countries to enhance the provision of credit to the small and medium-size enterprises most dependent on bank finance, so far with relatively little effect.

This failure to move faster and more forcefully to resolve problem banks and inject additional capital is, in our view, a critical aspect of Europe's crisis. Here both Latin America in the 1980s and East Asia in the 1990s provide company but not comfort. Argentina in 1980, Chile in 1981 and South Korea in 1997 are all on Laeven and Valencia's (2012) list of top ten most costly banking crises as measured by fiscal cost as a share of GDP. Uruguay in 1981 qualifies if we instead use the increase in public debt as a percent of GDP as one's measure of fiscal cost, Ecuador in 1982 and Thailand in 1997 if ranks the severity of banking crises by cumulative output loss in percent of GDP. Of current Eurozone members, only Ireland qualifies for inclusion on Laeven and Valencia's list, which extends through 2011.³⁹ It doesn't take a crystal ball to see that Cyprus will qualify by the authors' next revision. We would argue that other Eurozone countries like Spain and Italy are likely to be included as well. That banking crises are more costly in advanced countries with relatively large and developed banking systems is an established fact. That banking crises become more costly to resolve the longer forbearance is extended is also well known. Spain and Italy qualify as plausible candidates for this rogues' gallery on both grounds.

Why Europe has been so slow to address its chronic banking crises is an important question. The comparison with the United States suggests that the answer, in part, is the absence of banking union. FDIC insurance, an integral element of U.S. banking union, makes for significant cost sharing when banking problems arise (and are, inevitably, unevenly distributed across states). Federal regulation gives a supra-state authority, the FDIC, the power to intervene forcefully to resolve problem banks. In Europe, there is no analogous cost sharing or even, as yet, an agreed system for imposing large losses on the banks' owners and creditors. Governments, even where they have bank-resolution powers, are unable or unwilling to exercise them. Because writing down private claims is viewed with alarm, they prefer to extend and pretend.

In principle, cost sharing would be possible if the European Stability Mechanism was permitted to inject capital directly into the banks instead of making any emergency assistance an obligation of the sovereign. In principle, the single supervisory authority now under construction or another dedicated entity could be given the power to step in and forcefully resolve problem banks. The desirability of these principles was acknowledged by Eurozone leaders in their summit statement on June 29, 2012, but there has been backtracking ever since. Political resistance to cost sharing has grown more intense. Countries remain reluctant to see their domestic financial champions become subject to meaningful supervision and resolution authority of an outside entity. The result, underscored by the case of Cyprus, has been that resolution costs fall entirely on the national banking system and its stakeholders.⁴⁰ The absence of a proper resolution authority means that agent for forcing action becomes the ECB, which threatens to halt Emergency Liquidity Assistance unless steps are taken. Not only is this economically

³⁹ It is in the top ten in terms of both cumulative output loss and increase in public debt.

⁴⁰ Illustrative of the point, we would observe that large deposits at the Greek branches of Laiki Bank are not being subjected to haircuts. Loans made by the European Central Bank through its Emergency Lending Authority to Laiki are not being haircut or written down by the ECB's shareholders but instead are being transferred to the Bank of Cyprus, where their cost will be borne by other stakeholders in the Cypriot banking system. And recapitalization of the Bank of Cyprus will be achieved entirely imposing losses on other stakeholders in the bank, not through any injection of ESM monies. That some of the "stakeholders" in question are Russian and other foreign depositors complicates this discussion, but not much.

inefficient, since it threatens to bring down solvent as well as insolvent banks, but it is politically problematic, since acting as Europe's de facto resolution authority is not part of the ECB's mandate

Finally, there remains a reluctance to contemplate debt restructuring. Again the comparisons with Latin America and East Asia are suggestive. East Asian countries were able to restructure their problem debts relatively quickly, in part because much of that debt was private and thus could be restructured through domestic bankruptcy proceedings.⁴¹ This is a positive for countries like Spain, where much of the debt burden is private, but a negative for countries like Italy with a heavy sovereign debt burden.

In the case of Latin America it was as much the external bank creditors and their governments as the indebted sovereigns themselves that resisted meaningful restructuring and continued to hope against hope that extending maturities and playing for time might somehow magically solve the problem. Only when international banks had strengthened their balance sheets sufficiently to absorb the blow did the governments of the creditor countries push for meaningful debt restructuring under the Brady Plan. That Europe has made so little progress in dealing with its problem banks thus does not bode well for resolving its sovereign debt overhang. That a considerable amount of the debt of the crisis countries has migrated onto the balance sheets of the ECB and ESM is actually a positive from this point of view: it weakens the link between sovereign debt restructuring in the crisis countries and the stability of creditor country banks. Of course, for that migration of debt to make any difference requires shareholders in the ECB and ESM to acknowledge that further sovereign restructurings are unavoidable and that the costs will have to be shared.

The lesson that European officials would like us to draw from the Greek debt restructuring is that Greece, with its exceptionally heavy debt load and deep recession, is a special case; there is no reason for thinking that other Eurozone sovereigns will follow. The lesson we draw is the opposite: the Greek debt exchange, while far from immaculate in conception or execution, shows that significant debt reduction can and should be achieved, at relatively low cost, in a number of other European countries. The debt exchange was successfully executed in relatively short order once European policy makers exited the denial stage. This unsurprising conclusion can be generalized to other countries: IMF (2012) shows that bond exchanges can be completed quickly compared to bank debt restructurings; that high investor participation rates are the norm rather than the exception; and that domestic restructurings (equivalently in our context, restructurings of debt subject to domestic law) can be implemented more quickly and cleanly.

Greece's experience is consistent with these conclusions. Zettelmeyer, Trebesch and Gulati (2012) show that the sovereign was able to obtain significant relief through an aggregate creditor haircut of 58-65 per cent. High participation rates were achieved, partly by retrofitting bonds subject to domestic law with collective action cum aggregation clauses that reduced the attractions of holding out.⁴² If European leaders are still worried about holdout problems, they

⁴¹ Sometimes only after steps to streamline and update mechanisms for bankruptcy proceedings; see Manning (1999).

⁴² In addition, foreign bondholders were encouraged to accept the exchange but "upgrading" the new bonds to English governing law and by moral suasion by their home authorities (who were also Greece's official creditors).

can amend the treaty establishing the European Stability Mechanism to prevent holdout creditors from attaching the sovereign's assets elsewhere in the Eurozone, as suggested by Buccheit, Gulati and Tirado (2013). If they are worried about irrational contagion to sovereigns with sustainable debts, that's what the OMT is for.⁴³

If an accurate diagnosis of Europe's problem is "austerity, difficulty of adjustment, chronic banking problems, and debt overhang," then the corresponding solution is (i) back-load the austerity, (ii) provide more monetary support for adjustment, (iii) clean up the banking system, and (iv) restructure the debt. This isn't rocket science.

⁴³ Because debt restructuring in the midst of a crisis is inevitably controversial, an approach that treats sovereign debt repayments as contractually state-contingent by, for example, automatically extending repayment maturities at agreed thresholds, is an idea whose time has come. The Eurozone in creating a regulatory requirement for such a mechanism will do itself and the world a favor. See Mody (2013) for a discussion.

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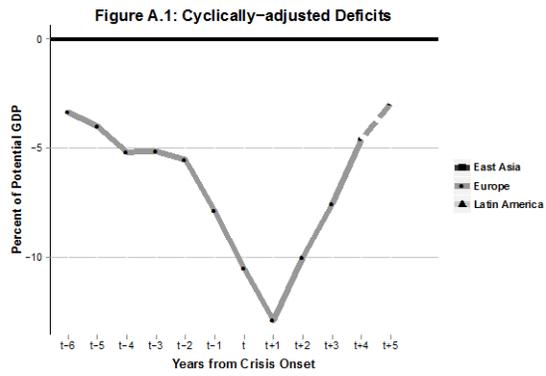
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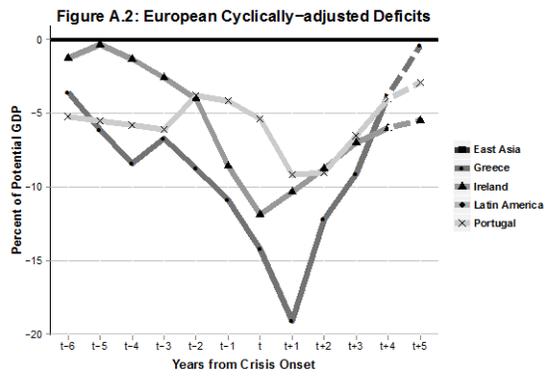
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Appendix



Source: IMF World Economic Outlook (April 2013), unweighted country averages



Source: IMF World Economic Outlook (April 2013), unweighted country averages