

Political Credit Cycles: The Case of the Euro Zone*

Jesús Fernández-Villaverde[†] Luis Garicano[‡] Tano Santos[§]

March 15, 2013

Abstract

We study the mechanisms through which the adoption of the Euro delayed, rather than advanced, economic reforms in the Euro zone periphery and led to the deterioration of important institutions in these countries. We show that the abandonment of the reform process and the institutional deterioration, in turn, not only reduced their growth prospects but also fed back into financial conditions, prolonging the credit boom and delaying the response to the bubble when the speculative nature of the cycle was already evident. We analyze empirically the interrelation between the financial boom and the reform process in Greece, Spain, Ireland, and Portugal and, by way of contrast, in Germany, a country that did experience a reform process after the creation of the Euro.

Keywords: Financial crisis, bubbles, Euro crisis, political economy.

JEL classification numbers: E0, D72, G15.

*We sincerely thank Costas Arkolakis, Markus Brunnermeier, Manolis Galenianos, Dirk Krueger, Philip Lane, Martin Oehmke, Stavros Panageas, Elias Papaioannou, Canice Prendergast, Ricardo Reiss, Waltraud Schalke, Dimitri Vayanos, and Pierre Yared for their generosity with their time in discussing this paper with us. All remaining errors are ours, of course.

[†]University of Pennsylvania, NBER, and CEPR.

[‡]London School of Economics, Centre for Economic Performance, and CEPR

[§]Columbia University

1. Introduction

“After entry into the euro area, the Bank of Greece will be implementing the single monetary policy decided by the Governing Council of the European Central Bank and it will certainly be impossible to improve the economy’s international competitiveness by changing the exchange rate of our new currency, the euro. The objectives of higher employment and output growth will therefore have to be pursued through structural reforms and fiscal measures aimed at enhancing international competitiveness by increasing productivity, improving the quality of Greek goods and services and securing price stability.” (Lucas Papademos, Greece Central Bank Governor, at a conference to mark Greece’s entry to the Euro, 2001).

Before monetary union took place with the fixing of parities on January 1, 1999, the conventional wisdom was that it would cause its least productive members -particularly Greece, Portugal, Spain, and Ireland¹- to undertake structural reforms to modernize their economies and improve their institutions.² This paper argues that, due to the impact of the global financial bubble on the Euro peripheral countries, the result was the opposite: reforms were abandoned and institutions deteriorated. Moreover, it argues that the abandonment of reforms and the institutional deterioration prolonged the credit bubble, delayed the response to the burst, and reduced the growth prospects of these countries.

In the past, the peripheral European countries had used devaluations to recover from adverse business cycle shocks, but without correcting the underlying imbalances of their economies. The Euro promised to impose a time-consistent monetary policy and force a sound fiscal policy. It would also induce social agents to change their inflation-prone ways. Finally, as in the opening quote, it would trigger a thorough modernization of the economy.

As section 7 shows, this was the case for a different economy: Germany. Faced with a limited margin of maneuver allowed by the Maastricht Treaty and with a stagnant economy, Germany chose the path of structural reforms, giving a new lease on life to German exports. But this did not happen in the *peripheral* countries. Instead, the underlying institutional divergence between them and the *core* increased. The efforts to reform key institutions that burden long-run growth, such as rigid labor markets, monopolized product markets, failed educational systems, or hugely distortionary tax systems plagued by tax evasion, were abandoned and often reversed. Behind a shining facade laid unreformed economies.

The common origins of the financial boom are well understood. The elimination of exchange rate risk, an accommodative monetary policy, and the worldwide easing in financial conditions

¹Our narrative centers on the four countries subject to “Troika” programs as of early 2013. We also discuss Germany by way of contrast. We believe much of what we say applies to Italy and France, but we do not address them due to space limitations.

²For example, Bentolila and Saint-Paul (2000) say, “Indeed the conventional wisdom is that EMU will eventually remove some barriers to reform.” Bean (1998) argued that, once monetary and fiscal policies were out of the hands of governments, they would have no alternative but to carry out reforms.

resulted in a large drop in interest rates (see figure 1) and a rush of financing into the peripheral countries, which had traditionally been deprived of capital.³ Furthermore, demographics in Ireland and Spain favored the start of a construction boom with some foundations in real changes in housing demand, the opposite of Germany, where demographics depressed housing demand. As figure 2 shows, the percentage of the population between 15 and 64 increased dramatically in Ireland and, to a lesser degree, in Spain between the mid 1970s and 2007. In France and Germany, the peak happened about two decades earlier. Since then, both countries have experienced a slow decay in this segment of the population. These demographic trends were accompanied by an increase in the employment to population ratio and, thus, resulted in strong rates of growth even in the absence of productivity gains.

Section 2 identifies two channels through which the large inflows of capital into the peripheral economies led to a gradual end to and abandonment of reforms. The first one is the relaxation of constraints affecting all agents. It has long been observed in the political economy literature that for growth-enhancing reforms to take place, things must get “sufficiently bad” (see Sachs and Warner, 1995, and Rodrik, 1996). And, as the development literature has emphasized, foreign aid loosens these constraints by allowing those interest groups whose constraints are loosened to oppose reforms for longer. As explained in section 2, Vamvakidis (2007) also finds that this mechanism operates when debt grows, rather than aid.

The second mechanism is more novel. It affects the ability and willingness of principals to extract signals from the realized variables in a bubble, where everything suggests all is well. A sequence of good realizations of observed outcomes leads principals to increase their priors of the agents’ quality. When all banks are delivering great profits, all managers look competent; when all countries are delivering the public goods demanded by voters, all governments look efficient (this mechanism applies both to real estate bubbles, as in Ireland and Spain, and to sovereign debt bubbles, as in Portugal and Greece). This information problem has negative consequences for selection and incentives. Bad agents are not fired: incompetent managers keep their jobs and inefficient governments are reelected. The lack of selection has particularly negative consequences after the crisis hits. Moreover, incentives worsen and agents provide less effort.

Both of these mechanisms, the relaxation of constraints and the signal extraction problem, led to a reversal of reforms and a deterioration in the quality of governance in these countries. Somewhat counterintuitively, this observation implies that being able to finance oneself at low (or negative) real interest rates may have negative long-run consequences for growth.

³Although there are alternative explanations for the Euro crisis, the view that the credit bubble itself is the source of the disturbance is hard to counter. As shown by Forbes and Warnock (2012), there is a clear global factor, linked to financial volatility, in gross capital flow patterns. Lane and McQuade (2012) report a strong correlation between net debt flows and domestic credit: the ability of banks to raise external finance was crucial in allowing lending to increase faster than deposits, helping to finance construction booms and public debt. Finally, Lane (2012) documents how the nontraded sector expanded in the deficit countries, such as Greece, Spain, and Ireland, while it contracted in surplus countries, such as Germany. Our reading of the evidence is thus that the causality mainly runs from the credit bubble to the real changes and not in the opposite direction.

Other economists have already pointed out that the financial cycle reduces future growth, simply because of the debt overhang (Reinhart and Rogoff, 2009; Bernanke, Gertler, and Gilchrist, 1999). Also, researchers working on resource booms have suggested mechanisms that delay growth that apply here by analogy (a financial bubble is, in a way, a form of a resource boom). Grand, ill-conceived government programs involve lasting commitments that lead to higher taxes in the long run. Also, the “Dutch disease” suffered most clearly by Ireland and Spain (with land playing the role of a natural resource here) spreads, whereby human and physical capital moves from the export-oriented sector toward real estate and the government sector. But in our view, the reform reversal and institutional deterioration suffered by these countries are likely to have the largest negative consequences for growth.

Our work is also related to Rajan (2011), who links the real estate bubble in the U.S. with an attempt by politicians to shore up the fortunes of a dwindling middle class. We emphasize, instead, that in Europe the real estate boom interacted with the political-economic coalition that blocked reforms, allowing large policy errors to remain uncorrected and institutions to deteriorate.

After presenting our analytic framework in section 2, the rest of the paper focuses on the experiences of five countries (Spain, Ireland, Greece, Portugal, and Germany) and how membership in the Euro affected reform processes in these countries as well as introduced additional political economy constraints when the crisis came. In section 3, we explore the complex relation between politics and finance that characterized the growth of the *cajas*, the Spanish credit institutions that were dominated by the local political elites and that were responsible for the financial crisis in that country. Our contention is that membership in the Euro zone interacted with this peculiar sector, first to create the real estate bubble and, second, to bias the initial response to the crisis. Section 4 focuses on Ireland. Recent Irish economic growth can be best thought of as having two phases. The first was a healthy growth cycle characterized by strong increases in the employment to population ratios as well as reforms in key markets. The second was dominated by the real estate bubble fueled by systematic cuts in stamp duties associated with real estate transactions, increases in the income tax ceiling to qualify for mortgage interest rate deductability, and other similar policies. This created an environment in which loose corporate governance standards in the banking sector led to an unprecedented lending boom, which fatefully ended with the public guarantee of all banks’ liabilities. Sections 5 and 6 deal with Greece and Portugal, respectively, and the stalling of the reform processes in those countries. Section 7 describes the very different situation in Germany, where a unique constellation of factors, including Euro membership, produced the conditions under which reforms could take place. In sum, the bubble that the Euro brought, instead of completing the modernization of peripheral Europe’s institutions, became the sedative against any reform. We discuss now in detail why and how it happened.

2. Analytical Framework: The Political Economy of Reforms, Institutions, and Monetary Unions

The Euro project had four goals (see James, 2012, for a historical narrative). The first was to build a unified European identity. The second was to eliminate nominal exchange rate fluctuations and the large imbalances that those could create. Of special concern was channeling the export dynamism that Germany had displayed since the 1960s. Third, it would create a monetary authority isolated from political pressures. This was particularly welcomed by countries with poor inflation records such as Italy or Portugal. The fourth goal, the one we analyze in this section, was to broaden support for structural, supply-side reforms to improve Europe's growth rate. The main channel through which a monetary union was thought to affect the political economy of reform was by imposing additional constraints on monetary and fiscal policy. Without their own monetary authority and with fiscal policy limited by the Maastricht Treaty, national governments would have few options but to implement structural reforms they had previously been reluctant to undertake.

In fact, the steep drop in interest rates in the peripheral countries allowed by the Euro meant that the budget constraints that these countries faced were loosened rather than tightened. Moreover, the resulting financial bubble fueled the deterioration of governance and of the institutional arrangements on the Euro periphery through several mechanisms we will describe momentarily. Therefore, the Euro might have led to a persistently negative impact on the peripheral countries that goes beyond the usual arguments for slow recoveries after a financial crisis.

We provide here a framework to analyze these issues. Specifically, we discuss the three questions begotten by the logic above. First, how does an irrevocably fixed exchange rate regime affect the political economy of reform? Second, how does financial integration, and the ensuing credit boom, alter this logic? And third, how persistent would we expect these effects to be?

2.1. The Arguments 15 Years Ago: Reforms Under Fixed Exchange Rates

The debate on the Euro and the political economy of reform centered on the impact of the loss of monetary and fiscal autonomy implied by the new fixed exchange rate regime. Interestingly, the debate largely ignored the channel that proved, in retrospect, to be crucial: the increasing financial flows and the credit cycle they generated.⁴

The pre-Euro literature (see the summary in Bean 1998) presented four optimistic reasons to argue that the Euro would favor structural reforms. First, it was suggested that governments that cannot use demand-side policies to lower (even if temporarily) unemployment would have no choice but to use structural reforms as a substitute. Second, the ability of business to more

⁴There was also a large literature on the effects of the Euro on trade, macroeconomic performance, and international finance, but we omit its discussion to center our presentation on the political economy aspects of the common currency.

easily switch between countries would lead European nations to compete by offering the better business environment fostered by those reforms. Third, a Euro zone was likely to increase decentralization in wage bargaining to allow firms to adapt to changing circumstances without the help of monetary policy. Since wage bargaining had been shown to work best when it was entirely decentralized (such as in the U.S.) or totally centralized (such as in the Scandinavian countries), this increased flexibility would help the peripheral countries where wage bargaining was done at an inefficient, intermediate level (Danthine and Hunt, 1994). Finally, the Euro could increase the market discipline on government borrowing because domestic private institutions would be able to lend in other countries of the Euro area without exchange rate risk instead of just to their own treasuries. Indeed, the Delors Report that informed the creation of the Euro expected this market discipline to be even more formidable than the formal constraints of the Maastricht Treaty.

The literature also worried about the opposite effect. The absence of an accommodating monetary and fiscal policy meant that the structural reforms must take place “without anesthesia,” increasing the pain that must be endured by losers and making it less likely that the reforms could be implemented. The “two-handed approach” famously proposed by Blanchard, Dornbusch, and Layard (1986) would become impossible (Bentolila and Saint Paul, 2000). Absent supportive macroeconomic policies, the pain from reforms would be harder to tolerate and the coalition supporting reform could dissolve.⁵

In retrospect, during the first years of the Euro, this “rigidity of macro policy” channel played a role only in Germany -absent fiscal and monetary flexibility, Germany had to undertake painful structural reforms, as we discuss in section 7. But it did not play its expected role, either favorably or unfavorably, in any of the peripheral countries. This was because a different mechanism, the financial boom, gave national governments a tool to avoid painful reforms. We discuss this in the next section.

2.2. Booms, Reforms and Information Extraction, Selection, and Incentives

While the literature on the impact of the Euro disagreed on the ultimate likelihood of reforms, it mostly agreed on the channel through which the impact would take place: tighter macroeconomic policies would affect, positively or negatively, reform incentives. However, the Euro did not make government budget constraints tighter. On the contrary, it made them looser.

Coinciding with the Euro entry, and caused by it, the peripheral countries enjoyed a gigantic credit inflow. As figure 3, panel A shows, while all of these countries started the decade with sustainable external debt positions, by 2010 all four countries we examine had reached net external debt close to 100 percent of GDP, either through the accumulation of public (Greece and Portugal) or private (Spain and Ireland) debt. This large inflow of capital was largely due to the

⁵Chari and Kehoe (2008) also pointed out the danger of “free-riding” in a monetary union. Given that the effects of labor market policies, bank supervision, or fiscal policy of an individual country could negatively affect the welfare of the entire union, the monetary authority could be forced, by the uncoordinated action of each member, to generate high inflation.

misperception of the risk existing once the exchange rate uncertainty had been eliminated. True, the Maastricht criteria placed limits on budget deficits. But the unprecedented financial booms enjoyed by these countries, as we shall see in the country sections below, allowed them to hugely expand their budgets, paying for it either directly through the issuance of historically cheap debt, as Greece or Portugal did, or through the extraordinary tax revenue related to the real estate bubble, as was the case in Spain (see figure 4, panel A), or even allowed for more procyclical fiscal policies as in Ireland (figure 5, panel C.)

The consequences for economic reform of such a windfall would not have surprised researchers working on the impact on reforms of foreign aid. Alesina and Drazen (1991) have argued that the political decision process for economic reform is a war of attrition, in which all groups try to delay the reform for as long as possible (with a cost to all) until one group has no more “budget” and gives up, bearing the largest cost. Casella and Eichengreen (1996) show that, in this context, if these groups expect foreign aid, they will delay concessions and reforms. Svensson (1999) shows, in a game-theory model, that any windfall (including aid) increases rent-seeking and reduces productive public spending, and he presents empirical evidence (see also Drazen, 2000) consistent with the proposition that aid delays reforms. Vamvakidis (2007) extends these arguments to the case of financial booms: a government that can easily borrow abroad may use such borrowing to postpone otherwise necessary reforms. Using an index of economic freedom to measure reform, he finds empirically in a panel of 81 developing and emerging countries that increases in external debt are correlated with slowdowns in economic reforms. Finally, Tornell and Lane (1999) present a model of a *voracity effect* where a windfall gain in an economy populated by many interest groups causes more redistribution and a reduction in growth.⁶

A second channel from the financial boom to the political economy of reforms is more novel in the literature and concerns how the credit bubble affected information extraction about the performance of financial institutions and governmental agencies. It is hard to obtain good signals of performance in a bubble. As Warren Buffet has most famously put it, “You never know who’s swimming naked until the tide goes out.” During the bubble, accountability is lost. A manager of a *caja* in Spain, or of a Greek pension fund, can make bad decisions without any negative short-run consequences because the rising asset prices in the bubble hide any mistakes. But managers and politicians understand that, thanks to the bubble, they can extract more rents without fear of punishment. Consequently, governance deteriorates and weak institutions become weaker.⁷

Our argument, essentially, is that voters, shareholders, lenders, and other interested parties face, as principals, a complicated signal extraction problem: given the sequence of outcomes that they observe from the agent, they need to infer how good the agent is or, similarly, how much

⁶See also Battaglini and Coate (2008), who present a model where lower debt leads, in expectation, to more pork barrel spending. In our paper, instead of a lower debt, we have a debt that is cheaper to finance. Similarly, in Yared (2010), a relaxed budget constraint induces policymakers to waste resources.

⁷Barro (1973) introduced the idea of politicians as agents in a principal-agent relationship. Ferejohn (1986) is an early example of the idea of voters basing their decisions on the observed behavior of politicians and politicians behaving based on those decisions by voters.

effort the agent is exerting. To be more concrete, consider the following problem in which the principal (voters, shareholders, ...) needs to filter signals to understand the quality of governance by the agent (government, top management, ...). First, we specify a transition equation for the evolution over time of the quality of governance q_t , which is stock:

$$q_t = f(q_{t-1}, e_t, \eta_t) \tag{1}$$

that tells us that q_t evolves as a function of its own lagged value, q_{t-1} , the effort exerted, e_t , a flow measure, and a random shock, η_t .⁸ The function f encodes the dynamics of a key state variable: the capital of governance in a society. In the absence of “investment,” e_t , governance depreciates. We are interested in the social incentives to exert costly effort to maintain the stock of corporate governance. To inform this decision we assume that agents observe

$$y_t = h(q_t, e_t, \nu_t) \tag{2}$$

that relates a performance variable y_t (dividends, economic growth, value at risk in a portfolio,...) to the quality of governance, the effort exerted, e_t , and a random shock, ν_t . To ease notation, we assume that e_t affects both equations (1) and (2), although one can easily think about e_t as a vector, with one component affecting the quality of governance (for example, searching for independent outside experts for a board of directors) and another component influencing the results (for example, the time spent by management with the board of directors laying out a strategy for the company). Persistence in the quality of governance is justified because bad decisions (low e_t) lead to more bad decisions: Naming someone with no background in banking but who is politically well-connected leads to persistent low governance as he stuffs the board with like-minded individuals more interested in repaying the favor than in monitoring the bank’s financial statements.

The combination of the transition and measurement equation is often known as a state-space representation of a dynamic system and can be derived from microeconomic fundamentals of a fully-specified model through the cross-equation restrictions implied by rational expectations and equilibrium dynamics (Fernández-Villaverde *et al.*, 2007). Agents observe a sequence $\{y_i\}_{i=0}^t$ and must update their beliefs about the quality of governance at time t , expressed as a conditional distribution $p(q_t | \{y_i\}_{i=0}^t)$ given some initial prior $p(q_0)$. This is a standard filtering problem that can be solved, under some technical assumptions, using recursively the Chapman-Kolmogorov equation and the Bayes’ theorem (see Cappé, Moulines, and Rydén, 2010).

⁸It is straightforward to extend the transition equation to more general setups, for example, by making q_t a vector that includes the leads and lags of relevant state variables. For clarity of exposition, though, we center on the simplest case in the main text. Also, we do not need to impose much structure on the function $f(\cdot)$ beyond measurability. In the same way, the shock η_t can have an arbitrary distribution. While assumptions such as linearity of $f(\cdot)$ or normality of η_t are often computationally convenient, they are somewhat irrelevant for the theoretical point we are making here. A similar argument works for the measurement equation below.

How does a financial boom affect the signal extraction problem given by equations (1) and (2)? In particular, what happens if, for several periods in a row, the measurement equation is hit by large and positive realizations of ν_t that deliver large and positive values of y_t ? Think, as an example, of y_t being the profits of a bank and ν_t as the increase in the value of its loan book triggered by a real estate bubble.

The key step in our argument is that bubbles make signal extraction harder. By the properties of filtering problems, no matter how bad a shareholder's original estimate of the quality of the bank's governance was, a sequence of large profits forces the shareholder to move this estimate toward higher quality. Unless q_t and e_t are perfectly observed, the principal has to divide the observation of a high y_t between a positive update of its estimate of the quality of governance (i.e., a shift to the right of the distribution $p(q_t | \{y_i\}_{i=0}^t)$) and a higher estimate of ν_t . The concrete division would depend on the parameters of the problem: for instance, if ν_t has a high variance, the principal will update its estimate of the quality of governance less than if ν_t has low variance.⁹ In other words, when all banks are delivering great profits, all managers look competent and when all countries are delivering the public goods demanded by voters, all governments look efficient. This mechanism applies, therefore, both to the real estate bubble in Ireland and Spain and to the sovereign debt bubble in Portugal and Greece.

This increased difficulty has two consequences: one in selection and one in incentives. First, bad agents are not fired: incompetent managers are able to keep their jobs and inefficient governments are reelected. If the principal's estimate of an agent's quality is sufficiently high, there is no reason to replace the agent. As we will see later, this lack of selection will have negative consequences when the crisis hits. Second, incentives deteriorate. Since there is a lower probability of underperforming, agents exert less effort. From the agent's perspective, there is little reason to spend effort if they believe that things will turn out positively in all events. Through equation (1), this translates into a lower q_t , which again will add persistence over time to bad governance.

But there are also three additional consequences that, although not necessary for our argument to hold, quantitatively amplify the mechanisms we are highlighting. First, the basic filtering problem in equations (1) and (2) assume that the principal has all the computational power required to perform the filtering at zero cost. Both assumptions are unrealistic: computational power is severely limited in practice and, more important, filtering requires hard work by the filterer. For instance, shareholders need to study the accounts of the firm and voters need to be informed about the issues. When downside risk is perceived as being capped by quasi sovereign guarantees by the other member states of the monetary union, both on states (Greece and Portugal) and on banks/cajas (Spain and Ireland), voters, shareholders and investors worry less about risk and

⁹We omit a thorough discussion of the update. In general, since we are not imposing linearity and normality in the state-space representation, each new observation y_t will have three effects on the conditional distribution of q_t : a change to its mean (*translation*), a change to its variance (*spreading*), and a change to higher moments (*deformation*), which raise some nuances beyond the scope of our brief description. With a linear-normal state-space representation, we will only have translations and spreadings.

decrease their investment in monitoring. This leads to a further deterioration in the signals about governance quality and again increases the decision makers' moral hazard.

Second, during the boom times, agents have considerable discretion over the timing of payoffs and can choose to generate large positive payoffs up front and postpone the negative ones. For instance, bank managers can issue highly risky loans that deliver high yields in the short run and that will only become non-performing years later. Or politicians can implement popular spending programs that, while initially cheap, have costs that will quickly escalate over time (this was particularly true in the case of Spain). The result is a large amount of equity extraction from corporate bosses (salaries, options. . .) or rents by politicians.

Third, we hypothesize that signal extraction is harder when economic activity is concentrated in real estate or finance than in manufacturing. In manufacturing there are accurate, concrete measures of performance: how productive a factory is, how third parties rank the good, and so on. In real estate or finance, it is much harder to assert where the "fundamentals" are: what is the real value of a loan or what will the market price of a condo be in 5 years? Hence, as economies focus more on real estate and finance (such as Spain or Ireland), the signal extracted from performance will deteriorate more than in more manufacturing-based economies (such as Germany), even if both types of economies are simultaneously booming.¹⁰

Finally, behavioral biases also contribute to the difficulty in providing good incentives during booms, specifically in the form of self-attribution bias: it is hard to convince agents that the good things that are happening are not a result of their own outstanding decisions (in particular, as their bonuses depend on this). As they become more overconfident, they are increasingly likely to overreach, as *cajas* did in Spain and Anglo Irish Bank did in Ireland.

As a result of the deterioration -for statistical, strategic, and behavioral reasons- in the quality of the signals of performance obtained by principals (shareholders, voters, etc.), financial booms lead to weaker monitoring and a deterioration in governance. Our next step is to argue that, due to the reform reversals and the fall in the institutional quality brought about by the mechanisms above, economic performance will be worse after the end of the financial boom. That is, we present a new channel for the persistence of the negative macroeconomic shocks.

2.3. Persistence of the Effects of Bubbles on Governance and Performance

The financial boom in Europe amounted to obtaining finance at low nominal interest rates, which were for some time even negative in real terms. A priori, financing private and public investments at negative interest rates involves receiving a subsidy from lenders. Hence, it is not obvious why this situation should be bad for a country's growth. However, one can identify multiple paths that lead countries on the receiving end of such financial largesse to suffer from persistently lower growth rates. The first two paths are borrowed from the "resource curse" literature, the third

¹⁰This point is related to the difficulty of measuring services in comparison with measuring manufactures in national accounts (Berndt and Hulten, 2007).

from the literature on financial crisis, and the fourth is the novel path proposed by this paper.

First, similar to the grandiose investments of the oil producers in the 1970s (Gelb, 1988), governments that can borrow freely are likely to waste enormous resources (new hospitals and universities in all towns, airports in the middle of nowhere). These unproductive expenditures create persistently lower growth, since they involve multi-year commitments that must be funded through future distortionary taxation.

Second, also as in the resource curse literature, countries with easy access to large capital inflows suffer a variant of the “Dutch disease” (Sachs and Warner, 1995). The credit bubble leads to a reallocation effect: relative price changes shift the allocation of capital -physical and human-toward activities such as construction investment and away from the production of tradable goods. While some of the inputs can be moved back to the tradable goods sector after the bubble explodes, others are sector-specific and have little scrapping value. Moreover, the investments in human capital are sticky: countries are left with large segments of the population unprepared for more sustainable activities. In the European periphery, a large part of the work force is poorly prepared to take advantage of a knowledge economy in which the returns to skill have been rising, rather than dropping (such as had appeared in the bubble years).

Third, the literature on financial frictions has argued that the recovery from financial crisis is inherently slow because agents suffer from a debt overhang: they need to deleverage and rebuild their capital. The point has been made empirically by Reinhart and Rogoff (2009) and, in a financial accelerator model, by Bernanke, Gertler, and Gilchrist (1999), among others.

The fourth channel is the institutional deterioration caused by the bubble. That is, the political economy of finance booms itself becomes a drag on recovery. There are two reasons for this persistence. First, there is the argument by Vamvakidis (2007) that debt buys time and can be used to postpone structural reforms. The second channel can be understood using our state-space representation in equations (1) and (2). First, as we have seen, the complication of signal extraction during a boom means that bad managers and politicians are not weeded out. When the bad times arrive, at the collapse of the boom, these bad managers and politicians are unwilling to act or are unable to cope with the situation. Furthermore, since collective action is always slow, it takes time to find more talented agents.¹¹ This slow turnover at the top deepens and prolongs the recession.

Second, the lower e_t in equation (1) yields a lower q_t , which has persistence over time. For instance, when politicians dismantle the human capital of a central bank to better make it a servant of their own interest, it takes years to rebuild the know-how of the institution. Similarly, bad management at the top of a firm deteriorates the quality of middle management. Thus, when agents need to be replaced, there is not enough talent in the firm’s pipeline.

Third, weakened institutions affect the political-economic equilibrium by strengthening the

¹¹In some countries, staying in power may be sought after as a means to avoid legal prosecution for alleged corruption crimes.

forces against reform and providing few rewards for those in favor. Normally, political success will reflect economic success: if a group grows, its lobby power will be larger and it would be able to push for institutions favorable to its interests (see for this point, Acemoglu and Robinson, 2013, and more in general, North, 1990). In a bubble, the success is a mirage. Money flows into the coffers of developers and builders, allowing them to increase their political power, a particularly dangerous proposition given the extent to which real estate depends on the discretionary decisions of the authorities. At the same time, the agents in the tradable goods sector have less income and employ fewer workers, reducing their political influence. That is, the bubble creates its own constituency that is only interested in the bubble continuing. And even after the bubble has burst, the constituency is reluctant to accept the required changes in economic policies.

We turn next to arguing that this simple framework can explain the different paths followed by some countries during the early years of the Euro. These countries (Ireland, Spain, Portugal, and Greece) had different dynamics prior to membership in the monetary union, partially driven by demographic factors, and were engaged, to some degree, in reform processes. We will show how these processes were slowed by membership in the monetary union. Specifically, the relaxation of the credit constraints that either the public or the private sector (or both) were subject to delayed either the transition to different economic growth models or simply the adoption of reforms. We then turn to Germany, a country that engaged in long-postponed and painful reforms in its welfare state in the same period, and argue that the circumstances that allowed delays in the periphery actually forced reform on a reluctant Germany

3. Spain

The years before the Euro were auspicious ones for reform efforts in Spain. The fiscal position was consolidated, a wave of privatizations created strong multinationals such as Telefónica and the conditions for the emergence of global companies such as Inditex (Zara) and Iberdrola were laid down for the first time. Moreover, the financial system was strong and well capitalized, and some of the Spanish banks, such as Santander and BBVA, became global powerhouses.

However, the real estate bubble led to the loss of the reform impulse. Between 1999 and 2007, Spain experienced a period of rapid growth, averaging 3.6 percent -higher than the growth rates of both the Euro area (around 2 percent) and the U.S. (2.6 percent). This growth was the result of a favorable external environment, due largely to the adoption of the Euro: real ex-post interest rates dropped by 10 points between 1990 and 2005. During this expansion, the grave problems in the Spanish labor market, education system, and institutional design went untouched or worsened. In the face of opposition, the attempts at reforming the labor market (in 2002) were quickly abandoned by the Aznar government. Also, the educational system suffered an increase in the dropout rate and local governments were infected by the pervasive corruption engendered by the real estate boom.

The drop in interest rates had a stronger effect in Spain than in other countries due to pecu-

liarities unique to that country. Spaniards hold a very large share of their wealth in real estate: 83 percent of households live in dwellings they own, and 80 percent of Spaniards' wealth is invested in real estate, a significantly larger share than in other countries (Bover, 2011). This makes them particularly sensitive to perceived increases in housing wealth. Moreover, nearly the entire mortgage market is priced at variable interest rates, and thus it is extremely responsive to the sudden increase in the availability of credit. Finally, in addition to the demographic factors already mentioned, Spain received large immigrant inflows: foreign-born residents went from 2 percent of the Spanish population to 12 percent between 1999 and 2009.¹²

Not all was well in the Spanish economy, though. First, the economy was growing by using more labor and capital, but had no gains in total factor productivity since 1995. Along this dimension, the contrast with Germany was striking (see figure 4, panel B.) Moreover, this was not the result of a pattern of growth concentrated in low-productivity sectors. On the contrary, more than 50 percent of the gap in productivity growth with Europe was due to lower productivity within each sector. A second concern was the reliance on internal demand and the consequent external imbalances. While imports of goods and services grew between 1995 and 2008 at a rate of 10.1 percent, exports were growing at 8.5 percent. The consequent large current account deficits meant that, from 2000 to 2009, Spain required 520 billion Euros of external financing (in undiscounted terms). The end result was a deterioration of Spain's net international investment position (figure 3, panel A). A third concern was the size of the real estate boom: at the peak, 25 percent of all male Spanish workers were employed in construction (Bonhomme and Hospido, 2012). Finally, the impact of the bubble on the government's budget was significant: by 2007, tax revenue was at least 2 percentage points of output higher exclusively due to the extra house transactions (Fernández-Villaverde and Rubio-Ramírez, 2009). As shown in figure 4, panel A, starting in the first half of the 2000s there was a significant acceleration in income tax and value-added tax revenues. Even though the public sector presented a small budgetary surplus, it committed itself to expenditure programs that, given the cyclical nature of the revenue, were not sustainable.

The pattern of Spanish economic growth in the decade between 1997 and 2007 drew the attention of academics, journalists, and observers and there was a lively debate about many of these issues in the press. In addition the 2004 general election, which the socialist party went on to win over the incumbent conservative party, rotated precisely around the issue of Spain's economic growth model. For example, Miguel Angel Fernández-Ordóñez, the governor of the Bank of Spain from 2006 to 2012, wrote in 2003¹³ (our translation): "When we see mortgage lending growing at 22 percent and we know that the injection of EU funds will continue through 2006, we see the growth differential due to domestic demand and concentrated in construction can be maintained for some time. The problem is what will happen when the drug of domestic

¹²González and Ortega (2009) use regional variation in immigrant numbers within Spain to argue that the immigration inflow is responsible for a 52 percent increase in house prices.

¹³"El legado de Rato," *El País*, September 11, 2003.

demand is exhausted. (...) We will see negative effects appear on the demand arising from the accumulation of household debt and the debt of public enterprises that the government hides today. Moreover, the failure to improve our productivity over the years means we will not be able to compensate for the future reduction of domestic demand with a greater contribution of the external sector.” Miguel Sebastian, an economist who became prime minister Rodríguez Zapatero’s main economic advisor, wrote numerous op-eds warning of the many imbalances building in the Spanish economy.¹⁴ Official institutions were also aware of the peculiar dynamics developing in Spain. The European Commission in its 2003 Fall Report warned about the risks associated with real estate appreciation in Spain,¹⁵ and the International Monetary Fund, in its June 2006 Technical Note, described the imbalances in the Spanish housing market.

But the proverbial punch bowl remained at the party. Neither the Aznar nor the Rodríguez Zapatero government took any significant measures to curtail the speculative process. This complacency extended to the Bank of Spain, where first the conservative appointee Jaime Caruana,¹⁶ and then Miguel Angel Fernández Ordóñez, the governor named by prime minister Rodríguez Zapatero upon the expiration of Mr. Caruana’s term, let risks accumulate in the Spanish financial system. And that is why we turn next to the role played by the Spanish banks.

3.1. The Cajas and the Real Estate Bubble

As we argued before, while some demand factors -immigration, a drop in real interest rates- contributed to the start of the real estate boom in Spain, those demand factors cannot matter much over the long run. Spain has a low population density and an excellent transportation system. Thus, while demand may explain a short-run burst in prices, it cannot account for a persistent price appreciation from 1997 to 2007 and the build-up of external and internal imbalances. Instead, the combination of the institutional redesign of the Spanish administration after 1975 and the legal changes that favored the growth of the cajas led to a significant fraction of the credit market to being determined by short-term political considerations.

A key aspect of the transition from dictatorship to democracy in Spain was an ambitious decentralization process. The years after the Constitution of 1978 witnessed the creation of 17 autonomous regions (*Comunidades Autónomas*) endowed with a wide range of powers. Among these powers were urban planning and zoning regulation. After some disputes -the 1978 Constitution being deliberately ambiguous about the details of the division of power between the

¹⁴See, for example, “El ladrillo y la burbuja,” (The brick and the bubble) El Pais, June 22, 2003.

¹⁵See “Bruselas Alerta a España sobre el riesgo derivado de los precios de la vivienda,” El Pais, October 29, 2003.

¹⁶In an unusually harsh move, the supervision staff from the Bank of Spain wrote a collective letter to the minister of finance on May 26, 2006 in which they questioned Governor Caruana’s “optimistic” handling of the crisis. The last phrase of the document summarizes it as follows: “For all these reasons, we, the Inspectors of the Bank of Spain, do not share the candid optimism of the Governor about the predictable evolution of the Spanish economy and that, from our perspective, and without wanting to spread alarm, there are enough reasons to worry, particularly if one considers the legacy of the six years of the governor Caruana’s tenure.” [our translation, from the original at http://www.fluzo.org/media/resources/1295/files/inspectores_banco_espana_caruana.pdf]

central and regional governments- the Spanish Constitutional Court, in a 1997 landmark decision, gave regions nearly complete control over zoning. The regions rushed to take full advantage of this decision. Interestingly, the most active region was Valencia, which would later become the epicenter of the real estate bubble, and which, in 1994, before the Constitutional Court decision, had already enacted its own regulation.

Most of the new regional legislation introduced two figures that had been nearly non-existent on the traditional Spanish zoning and planning system, which had relied in urban development plans approved decades in advance and that had received much criticism for its inflexibility and for the slowness it generated. The first figure was the real estate developer (*Agente Urbanizador*, although different regions came up with slightly different terminology). This was a private person or firm that could elaborate a detailed plan to build a whole area of a township (with condos, apartments, shops, etc.) and present it to the city council. The township would usually receive payment in terms of lots or cash. Eminent domain clauses could be used to force the owners of the land in the area to be developed to sell to the developer at some “fair price.” Then, the real estate developer would prepare the land, divide it into lots, and sell them to builders for a profit. The second figure was the collective zoning agreement (*Convenio Urbanístico*), whereby a group of landowners could present to the township a development plan of the area they controlled. If the city council approved it -again, thanks to the payment in terms of building lots or cash- the landowners were not bound by any previous zoning restriction.

These two figures, by giving nearly complete freedom to the townships to ignore zoning rules, opened the floodgates to institutional deterioration. Suddenly, an entrepreneur could make millions of Euros developing areas that had never been on the market before if he could just get the city council’s approval. This created a strong incentive for politically well-connected individuals to become real estate developers and widespread corruption followed. Similarly, it was too tempting for a small city mayor to pass up millions of Euros in side payments by denying his signature to a new development plan. Moreover, since the city would also receive “legal” payments from the developer in cash or in lots, land development became an important revenue source for local authorities, which could use the new-found riches to finance public programs that voters approved of. For the local political elites this was a powerful instrument to foster local economic activity. But Spanish regions are mostly financed through transfers from the central administration and run the health care and education systems. Thus, funding ambitious real estate projects was challenging and a third party was needed to provide the required capital. The *cajas*, the credit institutions that are unique to Spain, were ready to fill this gap.

The Spanish financial system was divided into two more or less equal parts between the non-profit (or *cajas*) sector and the for-profit bank segment. Originally created to provide banking services to the middle-class and working population, mainly ignored by traditional banks, the *cajas* had a strong provincial or territorial basis and a conservative outlook. Also the profits generated by their activities were destined for a variety of social activities (support of the arts, fellowships, etc.). It was only in 1971 that the *cajas* were equated with banks and came under

the supervision of the Bank of Spain.

Two key aspects of the regulation of *cajas* changed with the arrival of democracy. First, the governance of the *cajas* was changed in 1985, when their control was transferred to the regions. The regions were given full legislative powers over the *cajas* and the door was opened to their capture by local politicians. Also, the law did not address their liability structure. In particular, and fatally once the crisis started, it did not clarify the procedure to be followed for the recapitalization of an insolvent *caja*. Second, the *cajas* were allowed to expand territorially.¹⁷ Initially, the *cajas* were basically only allowed to operate in the province in which they were headquartered (a province being a subdivision of a region in Spain). From 1988, they were allowed to operate in the entire region with some exceptions. These regulations were eliminated with the Second European Union Directive on Banking, effective December 31, 1992. From then on, the *cajas* were free to operate throughout the country, with exceptions only if they did not reach the legal solvency ratios. As a result, the expansion of the *cajas* was relentless and involved an intense geographic diversification. While in 1991, a single *caja* had a 75 percent market share in 25 provinces, this was the case in only 17 provinces in 1995, 10 in 1999, and none in 2007. Similarly, the number of branches skyrocketed. By January 1, 2008, Spain had almost 25,000 *caja* branches, one for every 1,800 inhabitants.¹⁸ Not surprisingly, over this period the *cajas* were continuously gaining market share versus banks (figure 4, panel C.)

Furthermore, the *cajas* channeled lending in an indiscriminate manner to real estate developers. Because the growth in deposits was not enough to cope with the lending boom, they resorted to wholesale funding on an unprecedented scale. Since the loans were obviously Euro-denominated and against physical collateral (real estate assets), international institutions were able and willing to lend. The *cajas*, but also the traditional banking sector, were an important conduit through which international savings were recycled in Spanish real estate assets. Spain would soon find out, though, that monetary union exposes a member country to the perils of sudden stops (see figure 4, panel D). Moreover, the international flow of funds into Spain was partially channeled through institutions that were singularly badly prepared to handle it.

Indeed, the growth of this sector was not accompanied by improvements in their governance. In their past as small, local institutions, the *cajas* never had an incentive to improve their corporate governance. *Cajas* did not have shareholders: instead, they were governed by a board selected by the regional and local governments, employees, and clients. These boards were the perfect target for takeovers by low-human-capital managers with the right political alliances and who could finance politically motivated projects.

This point is clearly seen in Cuñat and Garicano (2009 and 2010), who document that the human capital of managers in the *cajas* was low and that those *cajas* where human capital was particularly low had the highest amounts of real estate lending and non-performing loans. Specifi-

¹⁷For a description of the *cajas* sector on the eve of the crisis, see International Monetary Fund (2006b).

¹⁸See Calvo and Martín de Vidales (2010) for a detailed analysis of the provincial expansion of the *cajas*.

cally, they find that a caja run by someone with a post-graduate education, with previous banking experience, and with no previous political appointments is likely to have significantly less real estate lending as a share of total lending, a larger share of loans to individuals, a lower rate of non-performing loans, and a lower downgrade in its rating.

The combination of local political elites only too willing to foster real estate activity and poorly managed and politicized cajas led to a real estate lending boom. Between 1995 and 2005, lending for construction and development went from 8 percent to 29 percent of GDP, eventually reaching 42 percent of all lending to productive activities. At the peak of the cycle (2009Q2) the real estate developer portfolio of Spanish credit institutions was 324.7 billion Euros. Lending to households for housing purchases grew from 17 percent of GDP to 49 percent over the same period (Beltrán *et al.*, 2010) and the mortgage portfolio of Spanish credit institutions reached a peak of 662.8 billions Euros in 2010Q3.¹⁹ This lending boom was accompanied by a boom in construction. The number of housing units built every year went steadily upward from 150,000 in 1995 to 600,000 in 2007 and the price increase was large by any metric. According to data from the Spanish Ministry of Housing, between 1998 and the peak of the boom in 2008, nominal housing prices increased by 175 percent, compared to a 61.5 percent increase in the CPI. The price increases were larger than the ones observed in the UK and the U.S. While in the U.S. the price to income ratio grew from 3 to 4 from bottom (2001) to top (end 2007) and is now back at 3, in Spain it went from 4 to almost 8 and is only back at 6.5.

3.2. An Example of Institutional Deterioration: Bankia

The collapse of Bankia, a banking giant with assets equal to 33 percent of Spanish output, with the resignation of its CEO, Rodrigo Rato, on May 9, 2012 led directly to Spain's request to the European Union for a "banking bailout." How two long-lived cajas, Caja Madrid and Bancaja, had come to an ignominious end less than 2 years after merging to form Bankia is a telling story of institutional deterioration triggered by the real estate boom.

Caja Madrid was one the oldest cajas. For the first decade after the passage of the 1985 law discussed earlier, Caja Madrid was run with the consensus of the main political parties of the rich region of Madrid. Its head, Jaime Terceiro, a distinguished academic economist, ran the entity professionally and managed to make Caja Madrid a fierce competitor in the credit market. In 1996, one year after the conservative party (PP) gained control of the region from the socialist party (PSOE), the PP put in place a coalition that pooled its votes with those of the trade union closely affiliated with the communist party (CC.OO.) in order to wrest control of Caja Madrid. The union lent its votes to the conservatives for the removal of Caja Madrid's head and its replacement by Miguel Blesa, a close friend of the newly elected prime minister José María Aznar. In exchange, the conservative party granted veto power to the union on personnel

¹⁹The Bank of Spain's statistics regarding credit institutions are summarized in Chapter 4 of its "Boletín Estadístico," which is available at <http://www.bde.es/bde/en/areas/estadis/>.

appointments and guaranteed that Caja Madrid would never allow the entry of private capital on the board, even if needed to ensure the solvency of the entity. In addition, the agreement called for the reactivation of the relationship with real estate developers, although it also warned against over-reliance on wholesale funding.²⁰

Starting in 1996, Caja Madrid expanded aggressively, participating and aiding in the real estate bubble. It also gained significant stakes in strategic segments of corporate Spain, thickening the complex web of politics, finance, and business interests that characterize Spanish capitalism. The apex of political intervention came when, in turn, Blesa was forced to step down by the head of the regional government of Madrid, who proceeded to nominate a close political ally with no experience in banking as the head of Caja Madrid. The resulting infighting within the conservative party led to the appointment of another of its powerful members, the IMF's former managing director and ex-Minister of Finance, Rodrigo Rato, who ran the entity until its nationalization in the spring of 2012 with the help of a board composed entirely of political appointees.

The other half of what was to become Bankia was Bancaja, the main caja in the region of Valencia. Also an old institution, it was established in 1878 and it stayed local for most of its history. Only around 1997, with the real estate bubble in its incipient stage, did it start a breakneck expansion and for the first time tapped the international debt markets.

The politicization of Bancaja deepened after the Valencia regional government modified the law regulating the Valencia's cajas in 1997. This law essentially handed control of the caja to the local government. In addition this law vested supervisory authority in a local entity, the *Valencian Institute of Finance*, which was an arm of the regional government without any supervisory authority at the time. This arrangement weakened the Bank of Spain, which retained ultimate responsibility for financial stability.

Perhaps few anecdotes illustrate as well the connection between politics and finance than the fact that the person appointed as president of Bancaja when the real estate bubble got going in earnest was José Luis Olivas, the very same politician who, as Valencia's finance minister, drafted the 1997 law regulating the local cajas (and who, in the meantime, had also been president of the regional government). Olivas had no experience in banking.²¹

As was also the case with Caja Madrid, Bancaja became an additional instrument of the region's political aims in several areas such as housing, energy, telecommunications, and entertainment.²² Over the next decade, Bancaja would participate in financing all of the major infrastructure projects of the Valencia government, including the Formula 1 in Valencia (at a cost of

²⁰The "Acuerdo PP-CCOO sobre Caja Madrid" was signed by the secretary general of the PP in Madrid and a trade union representative and was made available by CC.OO. This agreement was published in the Spanish press (see "El PP modificará la Ley de Cajas de Madrid para cumplir el compromiso con CCOO" and "El contrato de Blesa," both in *Cinco Días*, September 9, 1996) and it was openly discussed in the Spanish press (see "CCOO y el PP rubrican el acuerdo para que Blesa presida Cajamadrid," *El País*, September 7, 1996.)

²¹Olivas also became the president of Banco de Valencia, a publicly traded bank that was owned by Bancaja and that was also nationalized in the recent crisis.

²²See "Lo que vale Bancaixa para el Consell," *El País*, Nov 4, 2003.

244 million Euros), the Castellón Airport (200 million Euros; a plane is yet to land there), Terra Mitica (300 million Euros, an amusement park that entered bankruptcy in 2004), etc. As the decade progressed, the link between politics, developers, and cajas tightened further. The bursting of the real estate bubble has brought to light numerous corruption scandals in this otherwise wealthy region of Spain.²³

When problems started in 2009, the same political economy constraints that were behind the fueling of the bubble informed the early stages of the response to the crisis. Caja Madrid and Bancaja were merged into a large systemic institution, Bankia, dominated by the same political interests that had run both entities during the bubble years and with the Bank of Spain's consent. Two bad Cajas do not make a good bank, and Bankia, after an IPO that perfectly illustrated Spain's institutional weaknesses, was effectively nationalized in the spring of 2012.

4. Ireland

After a deep recession and huge budget deficits in the late 1970s and early 1980s, Ireland introduced important economic policy reforms in the second half of the 1980s. These reforms happened in the benign demographic context already discussed (see figure 2.) These two factors contributed to a sound recovery that delivered a real annual output growth that averaged more than 6 percent from 1987 to 2000. By 1999, Ireland had an unemployment rate of 5.5 percent. By contrast, Spain's unemployment was still hovering above 15 percent (see figure 5, panel A.)

First, after the 1987 elections, a broad consensus emerged among the political parties for a more constructive approach to policy. The Fine Gael, the main opposition party, committed itself to supporting those reforms -in particular budgetary measures- that it considered were in the national interest, especially if they helped in reducing tax rates. Second, the reforms in labor market institutions -combined with persistent high unemployment- kept real wage growth below that of Ireland's major trading partners. Third, strategic sectors of the economy were liberalized, such as air transport (Barrett, 1997) or the telecommunication system (Burnham, 2003), which was, at the time, reputed to be the worst in Western Europe. Finally, the European Union increased its generous transfers up to around 4 to 5 percent of Ireland's output throughout the 1980s and early 1990s.

As already mentioned, by 2000, this exceptional growth spurt seemed to be coming to an end. From the late 1980s, Ireland's growth had been fueled by an increase in hours worked, while productivity was growing at a rate similar to that of other European countries.²⁴ This was possible because in 1989 Ireland -due to high unemployment and a late baby boom- had the lowest employment ratio in the OECD, 31 percent (Whelan, 2010). By the end of the millennium, additional labor as a source of growth was essentially exhausted as unemployment had fallen to

²³An absorbing description can be found in "Tierra de saqueo," *El País*, January 15, 2012.

²⁴Here productivity growth controls for the effect of multinationals that book a large fraction of their international profits in Ireland to benefit from low taxation (Honohan and Walsh 2002, figure 13).

4 percent. Ireland was facing a significant slowdown in growth. And yet, the slowdown never happened.

Instead, real interest rates dropped throughout the 1990s, reaching negative values in 1998, where they stayed for most of the early years of the Euro's existence (see figure 5, panel B.) Not surprisingly, this led to an increase in valuations and a higher private investment in housing. While many observers complained that a simple Taylor rule dictated that the nominal interest rate in Ireland should have been several hundred basis points above where it was, this was no longer feasible.

In the 1990s, Ireland combined a high incidence of owner occupation -driven by a low user cost of housing, fiscal incentives, and regulation- with the smallest number of dwellings relative to its population in the European Union (Somerville, 2007). Thus, the Celtic Tiger years started with an abnormally low stock of housing. As is always the case with real estate bubbles, there was a "fundamental" component to the Irish housing boom. Housing construction accelerated in the 1990s, with house completions going from 19,000 in 1990 to 50,000 in 2000 and to 93,000 in 2006.²⁵ Soon, Ireland was the country in the European Union with the highest share of housing investment in gross capital formation and construction became the dominant sector driving growth and employment. By 2007, 13.3 percent of all employment was in the construction sector (in the United Kingdom and the U.S. that same number never went above 8 percent). Given that the labor market was already tight in 1998, the housing boom put undue pressure on wages, which led to a loss of competitiveness and large current account deficits. Irish financial institutions expanded credit considerably, borrowing from international wholesale markets to fund the housing cycle (figure 3, panel B). Instead of transitioning toward a lower, more sustainable rate of growth based on productivity gains, Ireland went from growth based on increases in the employment ratio to a massive speculative cycle.

Instead of reining in the bubble, governmental policy accentuated it through a procyclical fiscal policy and regulatory and tax changes that made real estate development even more attractive. That is, Irish policy makers, rather than leaning against the considerable forces of the credit expansion, introduced measures that added to the virulence of the cycle, giving the Celtic Tiger a few more years of intense growth.

First, fiscal policy became extremely procyclical. Government expenditures doubled in real terms, with an annual growth rate of 6 percent between 1995 and 2007. Taxes were repeatedly lowered during the boom, particularly tax incentives for the real estate sector (Honohan, 2010). The income tax was cut several times, until Ireland reached a stunning income tax and employee contribution average rate of 6.7 percent of gross wage earnings for a single-earning married couple with two children (see figure 5, panel C). In the housing sector, stamp duties (a sales tax on homes) were lowered in 2001, 2002, 2003, 2005, and 2007, while the ceiling on income tax deductibility

²⁵The ratio of house prices to disposable income remained stable until the second half of the 1990s, when it grew from 7 to 12 in less than a decade (see Whelan, 2010 Figure 8).

of mortgage interest was increased in 2000, 2003, and 2008.²⁶ Tax concessions were granted for urban renewal, multi-story car parks, student accommodations, nursing homes, hotels, and holiday camps. Finally, the special incentive tax rate for developers between 2000 and 2007 sought to free up land for development by taxing the proceeds at 20 percent rather than at the higher 42 percent that prevailed before, with an estimated loss of revenue of 800 million Euros (Byrne, 2012).

Second, several major legislative changes limited the regulatory oversight of financial institutions. The 2003 act that established the Central Bank and Financial Services Authority of Ireland (CBFSAI) divided supervisory responsibilities between the newly created Irish Financial Services Regulatory Authority (IFSRA) and the Central Bank of Ireland. This reorganization contributed to the lax banking supervision that characterized this period and which forced the (re)establishment of a single fully integrated regulatory institution in June 2009. Some informed parties such as Bertie Ahern, Ireland's former prime minister, have gone as far as identifying this regulatory overhaul as the main culprit in the crisis (Brown, 2009).

This new regulatory framework perniciously interacted with a particular development in the Irish banking sector: the emergence of Anglo Irish Bank.²⁷ If the Irish economy did well during the early years of the Euro, Anglo did even better. Its balance sheet grew by a factor of 14 between 1999 and 2007, transforming it into a systemic risk for Ireland: At its peak Anglo Irish's balance sheet was 57 percent of Irish GDP (figure 5, panel D). This phenomenal expansion was rooted in a business model that emphasized speed in loan approval and a disregard of bank rules. It was common that a customer would apply to Anglo for a loan of several million Euros for a property development project on a Monday and receive approval by the end of the week (Carswell 2011). Anglo's strategy of relationship lending led to a double concentration in its loan portfolio: a few large borrowers and, in a single sector, property development. Furthermore, Anglo's minuscule branch network meant that the loan expansion had to be funded by the international wholesale markets.

But the real impact of Anglo Irish Bank was to change the whole Irish banking sector as other banks reacted by loosening standards to match Anglo in profitability and avoid losing customers. As the Nyberg report states, the problems at Anglo Irish were in plain sight for the regulators, but bank management and boards could not recall a meaningful engagement on prudential issues with the IRSRA. The failure of the Irish banking system was not related to financial innovations or regulatory arbitrage but to a failure to follow up on supervisory oversight on credit concentration risk and fragile funding (Whelan, 2010). It was low-quality governance.

²⁶These measures added to an already overfriendly tax environment for housing. In general, Ireland has the most generous tax provisions for owner-occupied housing, "largely because it is the only OECD country that allows households a tax deduction for mortgage interest payments at the same time as not taxing property values, capital gains or imputed rents" (Rae and van de Noord, 2006, p. 8). For a description of the main tax provisions for housing, see Rae and van de Noord (2006, box 1).

²⁷For fascinating accounts of the rise and fall of Anglo Irish Bank, see Carswell (2011) and Lyons and Carey (2011). A more systematic survey of governance issues in the Irish banking sector is the "Nyberg report" (Nyberg, 2011).

Why this tolerant governmental policy toward the boom? Given that the problem had been diagnosed at the time by international organizations such as the IMF and the OECD and by Irish economists (Honohan and Walsh, 2002), why did the government add more gas to the fire? The evidence is suggestive that Irish policy makers, confronted with the end of the growth of the 1990s, preferred to ride and fuel the housing bubble and delay the inevitable slowdown. Voters, as explained in the analytic framework section, faced a difficult filtering problem regarding the true state of the Irish economy, which was steadily growing. The pro-real estate measures were accompanied by a flow of political donations. From 1997 to 2007, 35 percent of disclosed donations to Fianna Fail -the party in government- were from property developers and the construction industry, by far the largest group in terms of donations (Byrne, 2012). Adding hotels (9 percent) and banks and insurance companies (5 percent) shows that 49 percent of disclosed donations were from parties that had a direct interest in the real estate bubble. The coalition of interest groups and an electorate demanding easier access to housing was too powerful to resist.

Whether the close relationship between bankers, developers, and government was at the heart of the crucial decision to provide a blanket bank guarantee on Sunday September 30, 2008 may never be known (see Honohan, 2010, ch. 8), but, at the very least, it did not help the case against it. The Irish government extended the guarantee to *all* existing and new debt -deposits, including corporate and even interbank deposits, covered bonds, senior debt, and some subordinated debt.²⁸ The decision went against the advice of Merrill Lynch, which rightly noted the previous Friday that the guarantee would have a negative effect on the national rating.²⁹ Prominent Irish economists such as Patrick Honohan, the current Governor of the Central Bank of Ireland, were in favor of some guarantee, though clearly not the overly broad one that was extended. While it is possible that there is nothing more here than the rushed decision of an exhausted cabinet under stressful conditions, it is true that as Byrne (2012, p. 202) points out, the “[k]ey political decisions were insulated from critical debate because they were executed within a closed and cartelized system which facilitated regulatory capture.”

In sum, the lax financial conditions allowed by the Euro undermined governmental policy, which contributed to increase the virulence of the financial cycle and extended as far as bailing out private creditors from their mistakes during the crisis, with enormous consequences for Irish taxpayers’ welfare.

²⁸In comparison, when the Spanish government launched its own guarantee program in December of that year, it only guaranteed *new* debt.

²⁹The rating companies did not see it the same way. For instance, Fitch affirmed the AAA rating on Ireland following the guarantee decision, stating, “This proactive measure should help buttress confidence in the Irish financial system and limit the risks of a deeper and more-prolonged-than necessary recession at a time of unusual stress in global banking markets” Bloomberg (2008).

5. Greece

5.1. Public Imbalances

In the decade after the accession to the Euro zone, Greece enjoyed growth rates of over 2 percent in every year from 2000 to 2008, peaking at almost 6 percent in the pre-Olympic 2003. This growth was higher than in the Euro area as a whole. Among the factors behind this strong performance (apart from issues related to national accounting) were financial liberalization coupled with membership in the monetary union, strong export growth, and the fiscal stimulus associated with the Olympic games. Mitsopoulos and Pelagidis (2012) add to these factors partial improvements in the regulation of product markets, although these were concentrated in the telecommunications sector;³⁰ transportation and energy remain essentially regulated and non-competitive.

And yet, the imbalances building in the Greek economy were there for all to see. The current account deficit, already at almost 8 percent in 2000, reached 15 percent in 2008 and was always above 5 percent. Even after the recession, it was 9.8 percent in 2011. As a result of these large deficits, net external debt rose from 42.7 percent of output in 2000 to 82.5 percent in 2009. This current account deficit was not, as in Ireland and Spain, the counterpart of large inflows of money into the private sector. The entirety of Greece's net external debt is accounted for by the public sector, which in 2009 had debt of over 100 percent of output (see figure 3, panels A and B).

Euro zone membership did little to alter these dynamics. An unsustainable situation had been developing since 1980. During the 1980s and the 1990s, the yearly average government deficit was over 8 percent of output. Similarly, the foreign international position of Greece was a long-running problem, with average yearly current account deficits of over 10 percent in the 1990s and the 2000s. In 2004, the Greek electorate gave a strong mandate to the New Democracy Party, after 11 years of PASOK rule, to tackle the many problems afflicting the Greek economy, but the results were disappointing at best.

Greece's problem, more than any of the other peripheral countries, was that of an unreformed economy. The report on governance in Greece by the OECD in June 2012 is a grim indictment of the current state of Greek institutions. One of its conclusions was: "The combination of these factors – a weak Centre of Government, legal formalism, the absence of basic data, the lack of evidence-based policy making and an undeveloped HR strategy – has created an environment conducive to rent seeking." As Mitsopoulos and Pelagidis (2012, page 131) note, Greece can be seen as a country with almost first-class per capita output, but second-class governance, institutions, business environment, and corruption. The evidence of institutional deterioration in Greece is widespread, from the decreasing reliability of government statistics, to the drop in corruption rankings such as that supplied by Transparency International where Greece has dropped consis-

³⁰Throughout this period Greece's inflation rate was consistently above that of its trading partners, except for the telecommunications price index (Mitsopoulos and Pelagides, 2012, figure 5.9), which reflects the deregulation in this sector relative to other sectors in the economy.

tently down to its current position (78).³¹ Given the obvious challenges that the Greek economy has been facing, the lack of reform efforts is puzzling.

The answer is straightforward. For no country was the Euro as large a boon as for Greece. In 1994, the interest on the 10-year bond had reached almost 22 percent, for a differential with Germany of 1500 basis points. By June 2003, the combination of the global lending boom and the perceived disappearance of currency and default risk meant that Greece was paying a mere 3.6 percent and the spread with the German bund was virtually nil.

The impact of this drop in the funding cost on the political economy of Greece was large. Although the examples of arrested reforms are many, one of the clearest ones is the pension system, a costly and inefficient system that faced considerable demographic challenges. Figure 6, panel A, documents how Greece has a very high replacement ratio, at 95.7 percent, in fact the largest among OECD members. Moreover, figure 6, panel B, shows how the Greek pension system is on a path well beyond that of the other countries considered in this paper. The Greek political class had been aware of the need for reform for more than two decades. The next section offers a brief survey of the many failed attempts at accomplishing this reform.

5.2. The Political Economy of the Non-Reform of the Greek Pension System

Pension reform has been recognized as essential in Greece for more than two decades.³² As Featherstone (2003, p. 8) writes, the “first serious moves for reform came in 1990-92 when Greek public finances were in deep crisis and the EMU tests were being established. Fiscal laxity imperiled Greece’s European membership.” Upon the election of Mitsotaki’s New Democracy government in 1990, a renewed impulse for pension reform was initiated. Timid reforms such as the Souflias Law (so named after the National Economy Minister, Georgios Souflias) left structural problems untouched and the government promised a new round of reforms to tackle long-term problems with the pension system. A second attempt under Souflias’ successor, Stefanos Manos, was met with widespread opposition and once again many of the structural problems of the system went unaddressed.

The electoral defeat of the Mitsotaki government in 1993 brought back Andreas Papandreu and pension reform was shelved. The new prime minister, Costas Simitis, brought a renewed sense of urgency to the issue after the election of 1996. Several proposals were floated during this period. Perhaps the most far reaching of them was the one put forth in 2001 by Tassos Yiannitsis, the minister of labor. This proposal contemplated several far-reaching measures: the retirement age was to be raised; the required insurance period for a seniority pension increased; the replacement rate reduced to 60 percent of reference earnings; the minimum pension raised but means-tested; and the lower retirement age for mothers of younger children replaced. But in the face of massive

³¹The number of countries covered by Transparency International increased during the decade. Holding the sample constant, Greece would be on position 61 by 2010.

³²This description of the several attempts at pension reform in Greece is taken from Featherstone (2005).

protests, the proposals were withdrawn. A new reform package, by the new minister Reppas, characterized by creative accounting -no increase in the retirement age, while some would be able to retire early (Featherstone, 2005) and little real reform- sailed through parliament in 2002. The key issues identified by observers as problematic (sustainability, inequality, and fragmentation) remained untouched, and the reform impetus started in 1992 was abandoned.

Thus, the year 2001 saw the defeat of the last effort at pension reform in Greece even when it was considered to be “extremely urgent” (Borsh-Supan and Tinios, 2001). With a system that was overly generous and on an unsustainable path, Greece’s partners “saw her convergence as being partially dependent on pension reform” (Featherstone 2005). The European Union, rather than imposing real budget constraints, saw itself at that point as simply “facilitating policy learning.”

At the time of the adoption of the Euro, the Greek pension system was seen as a key problem- pensions consumed 12.1 percent of output and 52 percent of total social expenditure, versus 28 percent on average in the European Union. And yet, the poverty risk for pensioners was 2.3 times larger than for the general population, the largest by far in the European Union (where the same figure is 1.2). Moreover, the system was extremely fragmented, with 236 separate funds in 2003 (O’Donnell and Tinios 2003). The fragmentation not only caused multiple inefficiencies and duplications, but it also had a negative effect on labor mobility, as moving jobs often meant losing previous entitlements. Finally, the system was extremely unequal, with large privileges handed to the liberal professions and public-sector employees.

Once Greece had entered the Euro zone, Europe’s role changed. There was no more real reform pressure and even fewer constraints on Greece’s decisions. Rather, the pressure from the accession negotiations was replaced by “soft” pressure in the form of what the European bureaucracy referred to as the “open method of coordination,” based on benchmarking, surveillance, and sharing of best practices, assuming countries wanted to undertake reforms but were constrained by lack of knowledge. In other words, once Greece had dealt with the challenges of the Euro accession, and its budget was sustainable thanks to the large drop in interest payments, the reform momentum was gone. The reform that was supposed to be the culmination of the entire process started in 1992 was not taken up again until the recent crisis.

6. Portugal

After the long 15 years of economic growth that followed Portugal’s accession to the European Union, the country’s economy started to stagnate around 2000. It is hard to come up with a starker number to show this point than to note that, in 2012, Portugal’s output was lower than in 2001. Just as a comparison, Spain’s output was still nearly 17 percent higher in 2012 than in 2001 (see figure 7, panel A) and in Ireland it was 19 percent higher. Only in one year, 2007, of the entire decade 2001-2010 was Portugal able to grow more than 2 percent.

Researchers have pointed to different factors behind this poor macroeconomic performance but, perhaps, the most salient is the disappointing performance of total factor productivity, which

according to the KLEMS data set (see O'Mahony and Timmer, 2009, for a description of the data) fell in every year between 1999 and 2005. Restrictions to competition on many sectors, the dominant position of large firms in several key industries, the difficulties for foreign management to take over low-productivity Portuguese firms, and a dysfunctional labor market are prime suspects in accounting for this drop in TFP.³³

The government's budget did not present a more positive picture. The headline deficit never fell below 2.9 percent and the primary balance was constantly in deficit even after controlling for the effects of the business cycle and one-off and temporary adjustments (Marinheiro, 2006, updated 2011). The constant deficits led to a fast accumulation of public debt, from 51.2 percent of output in 2001 to 92.4 percent in 2010.

The private sector responded to this stagnant outlook by reducing its saving rate and heavily borrowing from abroad to finance current consumption (investment actually fell as a percentage of national demand). This translated into large and persistent current account deficits (between 6 to 12 percent of output), an acute deterioration in the real exchange rate, and an increasingly negative net asset position, most of which was held by banks (that had borrowed abroad to lend to local households).

Observers might have predicted a decisive program of structural reforms as a response to the previous figures. The behavior of both the public and the private sector was unsustainable in the middle run, a point well-recognized by most economists at the time. However, little action was taken and the parliamentary elections of 2002 and 2005 returned governments with little appetite for real change. Instead of forcing a positive institutional evolution in Portugal, the Euro allowed both the public and the private sector to postpone the day of reckoning.

In particular, the Euro brought historically low nominal interest rates. For example, the yield on the 10-year government bond fell from 12 percent in 1995 to slightly less than 4 percent by early 2005. Consequently, and while public debt was quickly growing, its service did not. In 2001, the interest paid on the debt was 2.9 percent of GDP. Ten years later, in 2010, and with 41.2 additional points of debt, the interest paid was 3.0 percent of GDP (figure 7, panel B). A similar situation occurred with private debt. A decade of heavy borrowing had been accomplished at a minimal cost in terms of interest payments.

The fact is that there was no push for reform in Portugal because there was no "demand" for it, even less a "supply," and the Euro allowed the political-economic equilibrium to be sustained in the middle run by the large capital inflows from the rest of the world even if a correction was eventually unavoidable.

With respect to the demand side, there was no constituency for reform. Large firms were reluctant to accept the liberalization of the markets for goods and services, entrenched managers were unwilling to be substituted by newcomers, inside workers resisted attempts at introducing

³³Portugal also had to face the entry into the European Union of countries such as Poland that specialized in similar low- and middle-technology manufacturing goods and that had more attractive wage costs.

more efficient labor regulations, and many low-income households benefited from increased social transfers (a rise of 4 points in GDP from 2000 to 2005) that actually succeeded in reducing Portugal's large income inequality and poverty rates. A broad coalition that cut across traditional party lines supported the status quo. The inheritance from Portugal's historical pattern of inward development³⁴ and the constraints created by the sudden change to democracy in 1974 made this coalition more powerful than in other European countries and limited the scope of a more dynamic export sector that could support reforms.³⁵

From the supply side, the parliamentary system created by the 1976 constitution disincentivizes cooperation among the main political agents and makes decisive reforms difficult to approve. First, Portugal divides executive power between the president and the prime minister to a larger extent than other European countries, lacking the virtues of either purer presidential systems, such as France, or parliamentary systems, such as Germany. The conflict between the two was clearly seen when President Jorge Sampaio called for an early parliamentary election in 2005, an election centered to a large extent on the economic policies that Portugal needed to reactivate its economy, despite the fact that the government at the time held a solid parliamentary majority and that no special event had occurred. Second, the electoral law, based on proportional representation, makes it hard for a single party to win an outright majority and forces coalition governments. Third, even during single-party governments, the power of the prime minister has been curtailed by the need to placate different party factions. This has been particularly true during the governments of the Social Democratic Party, which, despite what its name would suggest, is a big-tent party that has included, over time, a large range of positions from the right to the center-left.

When the economic crisis hit Portugal in 2008, private capital flows suddenly stopped. Initially, the financing requirements were met with TARGET liabilities and, after May 2011, with the funds from the Economic Adjustment Programme agreed with the European Union and the IMF. The Portuguese banks, deeply exposed to the sovereign debt of their own government, cut loans to firms, and the feedback loop from lower economic activity into lower tax revenue and higher sovereign risk left Portugal in a deep recession and with a banking sector in urgent need of recapitalization. Even if exports have shown over the last few years some dynamism, the fixed exchange rate has prevented a faster adjustment and the current account still presents a substantial deficit that requires fresh external financing. At the same time, the institutional barriers we identified above, including the lack of a broad coalition supporting reform and the constitutional arrangements, have not been removed. If anything, 10 more years of no reforms may have solidified them. Finally, the reduced degrees of freedom of the Portuguese government under the programme

³⁴See Bermeo (2002) for details on the strong support of Portuguese voters for aggressive redistribution policies—for example, in comparison with the much milder preference in Spain; Costa, Lains, and Miranda (2011) for a discussion of Portugal's historical pattern of growth; Fishman (2005) for the long-run political-economic consequences of the Revolution of Carnations of 1974, and Torres (2006), for the reluctance of important sectors of Portuguese elites to adopt the Euro, including the CDS-PP, the smaller of the two right-wing parties in Portugal.

³⁵For instance, in comparison with Spain, Portugal liberalized its economy much less during the 1960s, and it was less transformed by foreign capital and managerial know-how.

leaves it with little room to gather public support.

7. Germany

In the years after the introduction of the Euro, Germany undertook painful reforms of its welfare state. Why did the Euro not have the same impact on Germany as on the peripheral countries, namely, to buy time and postpone reforms? The answer is in figure 1: neither the Euro nor the bubble changed financial conditions in Germany. The Euro meant the convergence of the other countries' interest rates toward "German" levels, but Germany's rates were, obviously, already at German levels. Thus, for Germany, the Euro had the implications described in section 2.1 - tighter budgetary and fiscal constraints- and not the ones in section 2.2 -looser financial conditions. Absent the leeway provided by the financial boom, politicians had no choice but to act.

Germany was, a decade ago, the "sick man" of Europe. After the years of fast growth that followed reunification, the German economy slowed down. The average growth rate in the second half of the 1990s and first years of the Euro was barely above 1 percent. As a result, unemployment in Germany stayed stubbornly high and reached 11 percent in 2005 (figure 8, panel D.) In addition, the demographic factors that were so helpful in Ireland and Spain were not present in Germany (figure 2.) The share of the population between 15 and 64 years of age peaked in 1987 at slightly above 70 percent and then declined steadily for the next two decades. The sorry state of the East German economy and the crisis that followed unification only added to the challenges (Akerlof *et al.*, 1991) and thus, while Spain and Ireland were enjoying real estate booms, Germany's prices were actually declining (figure 8, panel C.)

This mediocre economic performance, the negative demographic trends, and the costs of the reunification shock put the German welfare state under severe strain. The consequent higher social security taxes and non-wage labor costs endangered German competitiveness. As documented by figure 8, panel A, the combined social insurance contributions increased considerably as a percentage of gross wages during the years preceding the introduction of the Euro. Compared with other countries, Germany's labor market policies were characterized by high expenditures and long duration of programs. Since social insurance schemes were essentially paid by employees, a decline in hours worked made the situation dire (Jacobi and Kluge, 2007). The unification exacerbated an already problematic state of affairs. Indeed, between 1990 and 1998 social insurance contribution rates increased from 35.5 percent to 42.1 percent; German unification accounted for about half of that increase (Streeck and Trampusch, 2005, p. 176).

The constraints faced by German politicians were severe. First, wage rigidities led to unemployment in times of economic crisis. According to Manow and Seils (2000), the independence of the Bundesbank and the political fragmentation associated with federalism prevented the expansionary demand policies needed to sustain employment. This left the German welfare state as the only mechanism of adjustment. Given the rigidities of the real wage bargaining system, the increases in labor taxation needed to fund social schemes (see figure 8, panel A) translated

into higher labor costs and thus higher unemployment. Shortfalls in the social program funds (pensions, health care, and unemployment) could only be met through recourse to the general budget, but this conflicted with the constraints on fiscal policy already mentioned.

Reunification and the opening of Eastern Europe to German capital increased the pressure on an overstretched welfare state and the arrival of the Euro tightened the constraints further. But even with reunification, a unique catalyst for change, reforms were slow in coming.³⁶ As mentioned, delays in the reform of the welfare state meant that shortfalls in the different social security schemes were increasingly covered by federal subsidies. For instance, federal subsidies to the pension insurance fund were 18.5 percent of total fund revenues, but reached 26.4 percent in 2003 (see figure 8, panel B). In 1997, Chancellor Helmut Kohl introduced reforms aimed at stabilizing contribution rates by including the use of demographic factors to account for increases in life expectancy. These measures were firmly opposed by the social democrats, who made large gains in the 1998 election by campaigning on the repeal of these changes (which in fact they did as they came to power). This reversal increased expenditures and the Schröder cabinet reacted with a battery of measures aimed at increasing revenues. That is, Gerhard Schröder's first term was characterized by policies similar to those of other countries confronted with unsustainable welfare states: further fiscal commitments to maintain benefits. But as Streeck and Trampusch emphasize (2005, page 181): “[h]aving stretched the federal budget to its limits, the measures of 1999 unintentionally forced the government to consider structural reform that went beyond short-term fiscal remedies.”

Hence, Germany entered the Euro zone in a state of distress and the sustained drop in interest rates the world experienced during those years did little to alleviate these long-run problems. The European Central Bank was setting a monetary policy for a newly created Euro area that was too tight for Germany. In addition, the European Central Bank was establishing its reputation and was unwilling to concede to German politicians' wishes.³⁷ Unpopular reform was the only road left open.

In particular, Schröder launched the Agenda 2010, the core of which was the Hartz I-IV reforms that constitute the greatest overhaul of the German welfare state since World War II.³⁸ The Hartz reforms came only after much resistance -and a serious corruption scandal that finally forced the issue on the sitting cabinet- and probably cost Schröder the 2005 election (Helms, 2007). The

³⁶Hassel (2010) summarizes the prevalent view among German scholars on the dynamics of reform in Germany, “[t]he fall of the Berlin Wall was a catalyst for a major transformation of the German welfare state and labor market. The adjustment process that started in the early 1990s was prompted by multi-layered challenges of unification and the consequent institutional adaptation, the changing role of Germany in European Monetary Union, the recession prompted by unification, and the long-term structure problems of the Bismarckian welfare state, which had been building up since the early 1970s.”

³⁷For example, as Schröder put it, “As well as their obligation to ensure price stability, the ECB also has the task of keeping growth in mind. And one can be sure that they also will do this” “German Slump Prompts Push for Lower Rates: Schroeder Urges the ECB To Focus on Growth, Too.” *New York Times*, June 30, 2001.

³⁸For a view of welfare reforms in the context of risk-taking behavior on the part of policy makers, see Vis (2010), pages 127-130, for the Hartz reforms in particular as a gamble for resurrection.

reforms changed a core principle of the German welfare state: whereas the system prevailing prior to these reforms was meant to preserve the social status of workers through retraining and public work schemes, the new system emphasized instead quick and sustainable job placement.³⁹ In particular, job seekers were required to accept any offer of suitable work, where the definition of suitable was considerably broadened.

Could German authorities have used the Euro to kick the can further down the road to avoid these reforms? As we mentioned before, Germany did not see a drop in interest rates because rates were already low. Second, the kernel of “truth” behind the bubbles in Ireland and Spain -favorable demographics and strong growth in the late 1990s- was absent in Germany. Thus, welfare reform was the sole option. The long-run effects of the Hartz reforms are still being debated (Jacobi and Kluge, 2007). Since the early years of the Hartz welfare state were characterized by strong growth in the periphery and in China -with which German exports have a high positive correlation- it remains to be seen how the German welfare state progresses when these factors are no longer active.

8. Conclusions

Observers expected the arrival of the Euro to lead to a modernization of the peripheral European economies. Lacking monetary and fiscal autonomy, governments would have to adopt structural reforms they had been previously refused to implement. In fact, as we have shown in this paper, the steep financial boom derived from the drop in exchange rate risk and from the Euro wide financial bubble meant that the budget constraints that these countries faced were loosened, rather than tightened. Countries that could cheaply borrow delayed painful reforms. Moreover, accountability was lost during the bubble as bad decisions have no negative short-run consequences when rising asset prices hide all mistakes. As a result, the financial bubble fueled the deterioration of governance and of the institutional arrangements on the Euro’s periphery. After laying out this argument, we have studied the different ways politics and economics connected in the different countries that enjoyed a financial boom, and we have contrasted them with the discipline that the Euro imposed on a country that did not experience any boom.

Our work suggests several avenues for future research. First, while case studies are ideal for providing a careful analysis of the mechanisms at play, a more systematic empirical analysis of public and private governance in bubbles is necessary to test our theory. Second, as we are currently doing in a work in progress, our hypothesis on signal extraction in bubbles needs to be formalized so that the problem can be analyzed with more depth. Third, our theory suggests that there may be differences between how damaging private and public bubbles are -private bubbles appear to be more damaging, since they not only affect the sustainability of public finances, but also damage governance in the private sector.

³⁹See Bruttel and Sol (2006) for the historical evidence on the adoption of “work first” approaches.

A final issue concerns the broader applicability of our analysis. Are all situations where financing is plentiful and cheap conducive to the lowering of standards, the deterioration of governance and the abandonment of economic reforms? If so, this situation is currently the one the United States, at the zero lower bound, is facing, in which case our analysis suggests that a similar deterioration public and private governance may occur.

References

- [1] Acemoglu, Daron and James A. Robinson (2013). “Economics versus Politics: Pitfalls of Policy Advice.” *Journal of Economic Perspectives*, forthcoming.
- [2] Akerlof, George A., Andrew K. Rose, Janet L. Yellen, and Helga Hessenius (1991). “East Germany in from the Cold: The Economic Aftermath of Currency Union.” *Brookings Papers on Economic Activity* 1991(1), 1-106.
- [3] Alesina, Alberto and Allan Drazen (1991). “Why Are Stabilizations Delayed?” *American Economic Review* 81(5), 1170-1188.
- [4] Barrett, Sean D. (1997). “The Implications of the Ireland-UK Airline Deregulation for an EU Internal Market.” *Journal of Air Transport Management* 3(2), 67-73.
- [5] Barro, Robert (1973). “The Control of Politicians: An Economic Model.” *Public Choice* 14, 19-42.
- [6] Battaglini, Marco and Stephen Coate (2008). “A Dynamic Theory of Public Spending, Taxation and Debt.” *American Economic Review* 98, 201-36.
- [7] Bean, Charles (1998). “Monetary Policy under EMU.” *Oxford Review of Economic Policy* 14(3), 41-53.
- [8] Beltrán, Alejandro, Michele Boldrin, Nicolás Borges, João Castello-Branco, J. Ignacio Conde-Ruíz, Enrique García, Luís Garicano and Pablo Vázquez, *A Growth Agenda for Spain*. Madrid, McKinsey and Co and FEDEA, 2010.
- [9] Bentolila, Samuel and Gilles Saint-Paul (2000). “Will EMU Increase Eurosclerosis?” *CEPR Discussion Papers* 2423.
- [10] Bermeo, Nancy (2002). “Portuguese Democracy in Comparative Perspective.” *Portuguese Studies Review* 10(1), 1-11 2002
- [11] Berndt, Ernst and Charles Hulten (2007). *Hard-to-Measure Goods and Services: Essays in Honor of Zvi Griliches*. University of Chicago Press, Chicago.
- [12] Bernanke, Ben S., Mark Gertler, and Simon Gilchrist (1999). “The Financial Accelerator in a Quantitative Business Cycle Framework.” John B. Taylor and Mike Woodford (ed.) *Handbook of Macroeconomics* volume 1, chapter 21, 1341-1393, Elsevier.
- [13] Blanchard, Olivier J., Rudiger Dornbusch, and Richard Layard (1986). *Restoring Europe’s Prosperity*, Cambridge University Press, Cambridge.
- [14] Bloomberg (2008). “Ireland Guarantees Bank Deposit, Debt for Two Years.” September 30.
- [15] Bonhomme, Stéphane and Laura Hospido (2012). “The Cycle of Earnings Inequality: Evidence from Spanish Social Security Data.” *Banco de España Working Papers* 1225.
- [16] Borsh-Supan, Axel and Platon Tinios (2001). “The Greek Pension System: Strategic Framework for Reform.” in *Greece’s Economic Performance and Prospects*, Ralph C. Bryant, Nicholas C. Garganas, and George S. Tavlas, editors, Bank of Greece and Brookings Institution, Athens.

- [17] Bover, Olimpia (2011). “Efecto de la Rentabilidad de la Vivienda como Inversión sobre las Decisiones de Compra: Evidencia Empírica a partir de la EFF.” Bank of Spain, Boletín Económico, May 2011.
- [18] Brown, John Murray (2009). “Ahern Admits to Part in Irish Crisis.” *Financial Times*, October 15.
- [19] Bruttel, Oliver and Els Sol (2006). “Work First as a European Model? Evidence from Germany and the Netherlands.” *Policy and Politics* 34 (1), 69-89.
- [20] Burnham, James B. (2003). “Why Ireland Boomed.” *The Independent Review* VII(4), Spring, 537-556.
- [21] Byrne, Elaine A. (2012). *Political Corruption in Ireland, 1922-2012: A Crooked Harp?* Manchester University Press, Manchester.
- [22] Calvo Bernardino, Antonio and Irene Martín de Vidales (2010). “La Expansión de la Red de Oficinas de las Cajas de Ahorro Españolas: un Análisis desde la Perspectiva de la Provincia” (2010). Boletín Económico de ICE N. 2987, April. 16-30.
- [23] Cappé, Olivier, Eric Moulines, and Tobias Rydén (2010). *Inference in Hidden Markov Models*. Springer.
- [24] Carswell, Simon (2011). *Anglo Republic: Inside the Bank That Broke Ireland*. Penguin Books, London.
- [25] Casella, Alessandra, and Barry Eichengreen (1996). “Can Foreign Aid Accelerate Stabilization?” *Economic Journal* 106, 605–619.
- [26] Chari, Varadarajan V. and Patrick J. Kehoe (2008). “Time Inconsistency and Free-Riding in a Monetary Union.” *Journal of Money, Credit and Banking* 40(7), 1329-1356.
- [27] Costa, Leonor Freire, Pedro Lains, and Susana Münch Miranda (2011). *História Económica e Portugal, 1143-2010*. Esfera dos Livros, Lisbon
- [28] Cuñat, Vicente and Luis Garicano (2009). “Did Good Cajas Extend Bad Loans? The Role of Governance and Human Capital in Cajas’ Portfolio Decisions.” *Mimeo*, FEDEA Annual Conference at Bank of Spain, 2009. <http://www.crisis09.es/monografia2009/cajas.html>.
- [29] Cuñat, Vicente and Luis Garicano (2010). “¿Concedieron las cajas “buenas” créditos “malos”? Gobierno corporativo, capital humano y carteras de créditos.”. in Samuel Bentolila, Michele Boldrin, Javier Díaz-Giménez and Juan J. Dolado (ed.) *La Crisis de la Economía Española, Fedea Monograph*, <http://www.crisis09.es/crisis.html>.
- [30] Danthine, Jean-Pierre and Jennifer Hunt (1994). “Wage Bargaining Structure, Employment and Economic Integration.” *Economic Journal* 104, 528-41.
- [31] Drazen, Allan (2000). *Political Economy in Macroeconomics*. Princeton University Press, Princeton.
- [32] Featherstone, Kevin (2003). “The Politics of Pension Reform in Greece: Modernization Defeated by Fridlock.” *Mimeo*, London School of Economics.

- [33] Featherstone, Kevin (2005). “‘Soft’ Co-ordination Meets ‘Hard’ Politics: The European Union and Pension Reform in Greece.” *Journal of European Public Policy* 12(4), 733 –750.
- [34] Ferejohn, John (1973). “Incumbent Performance and Electoral Control.” *Public Choice* 50, 5-25.
- [35] Fernández-Villaverde, Jesús, Juan F. Rubio-Ramírez, Thomas Sargent, and Mark Watson (2007). “A, B, C, (and D)s for Understanding VARs.” *American Economic Review* 97, 1021-1026.
- [36] Fernández-Villaverde, Jesús and Juan F. Rubio-Ramírez, (2009). “Una Propuesta de Política Fiscal ante la Crisis.” In *La Crisis de la Economía Española: Lecciones y Propuestas*, FEDEA, Madrid.
- [37] Fishman, Robert M. (2005). “Legacies of Democratizing Reform and Revolution: Portugal and Spain Compared.” Instituto de Ciencias Sociais, Lisbon.
- [38] Forbes, Kristin J. and Francis E. Warnock (2012). “Debt- and Equity-Led Capital Flow Episodes.” *NBER Working Papers* 18329.
- [39] Gelb, Alan H. (1988). *Oil Windfalls: Blessing Or Curse?* Oxford University Press and World Bank Research Publications, Washington DC.
- [40] González, Libertad and Francesc Ortega (2009). “Immigration and Housing Booms: Evidence from Spain.” CREAM, UCL, Discussion Paper, CDP No 19/09.
- [41] Hassel, Anke. 2010. “Twenty Years after German Unification: The Restructuring of the German Welfare and Employment Regime.” *German Politics & Society* 28, no. 2: 102-15.
- [42] Helms, Ludger (2007). “The German Federal Election, September 2005,” *Electoral Studies* 26 (1), 196-231.
- [43] Honohan, Patrick (2010). “The Irish Banking Crisis, Regulatory and Financial Stability Policy, 2003-2008: A Report to the Minister for Finance by the Governor of the Central Bank.” <http://www.bankinquiry.gov.ie>.
- [44] Honohan, Patrick and Brendan Walsh (2002). “Catching up with the Leaders: The Irish Hare.” *Brookings Papers on Economic Activity* 33(1), 1-78.
- [45] IMF (2004). “Ireland: Selected Issues.” IMF Country Report, no. 04.349, November.
- [46] IMF (2006a). “Spain: Financial Sector Assessment Program - Technical Note - Housing Prices, Household Debt and Financial Stability.” IMF Country Report, no. 06.210, June.
- [47] IMF (2006b). “Spain: Financial Sector Assessment Program - Technical Note - Regulation, Supervision, and Governance of the Spanish Cajas.” IMF Country Report, no. 06.215, June.
- [48] Jacobi, Lena and Jochen Kluve (2007). “Before and After the Hartz Reforms: The Performance of Active Labour Market Policy in Germany.” *Journal of Labor Market Research* 40, 45-64.
- [49] James, Harold (2012). *Making the European Monetary Union*. Belknap Press, Cambridge.

- [50] Lane, Philip (2012). “The European Sovereign Debt Crisis.” *Journal of Economic Perspectives* 26(3), 49-68.
- [51] Lane, Philip and Peter McQuade (2012). “Domestic Credit Growth and International Capital Flows.” *Mimeo*, Trinity College Dublin.
- [52] Lyons, Tom and Brian Carey (2011). *The FitzPatrick Tapes*. Penguin Books, London.
- [53] Manow, Philip and Eric Seils (2000). “The Employment Crisis of the German Welfare State.” *West European Politics* 23(2), 137-160.
- [54] Marinheiro, Carlos (2006). “The Sustainability of Portuguese Fiscal Policy from a Historical Perspective.” *Empirica* 33(2), 155-179 (updated in 2011: <http://www4.fe.uc.pt/carlosm/research/pdf/Data-CMarinheiro2006-Update2011.xlsx>).
- [55] Mitsopoulos, Michael and Theodore Pelagidis (2012). *Understanding the Crisis in Greece*, Revised Edition. Palgrave MacMillan, London.
- [56] Nyberg, Peter (2011). “Misjudging Risk: Causes of the Systemic Banking Crisis in Ireland,” available at <http://www.bankinginquiry.gov.ie/Documents>.
- [57] North, Douglass (1990). *Institutions, Institutional Change, and Economic Performance*. Cambridge University Press, Cambridge.
- [58] O’Donnell, Owen and Platon Tinios (2003). “The Politics of Pension Reform: Lessons from Public Attitudes in Greece.” *Political Studies* 51(2), 262–81.
- [59] OECD (2006). *Economic Policy Reforms: Going for Growth 2006: Progress in Responding to the 2005 Policy Priorities - Ireland Country Note*, Ch. 2.
- [60] OECD (2009), *Pensions at a Glance 2009: Retirement-Income Systems in OECD Countries*, OECD Publishing.doi: 10.1787/pension_glance-2009-en
- [61] OECD (2011). “Long-Term Projections of Public Pension Expenditure.” in *Pensions at a Glance 2011: Retirement-income Systems in OECD and G20 Countries*, OECD Publishing. http://dx.doi.org/10.1787/pension_glance-2011-32-en.
- [62] O’Mahony, Mary and Marcel P. Timmer (2009). “Output, Input and Productivity Measures at the Industry Level: the EU KLEMS Database.” *Economic Journal* 119, F374–F403.
- [63] Rae, David and Paul van de Noord (2006). “Ireland’s Housing Boom: What Has Driven It and Have Prices Overshot?” OECD Economics Department.
- [64] Rajan, Raghuram (2011). *Fault Lines: How Hidden Fractures Still Threaten the World Economy*. Princeton University Press, Princeton.
- [65] Reinhart, Carmen M. and Kenneth Rogoff (2009). *This Time Is Different: Eight Centuries of Financial Folly*. Princeton University Press, Princeton.
- [66] Rodrik, Dani (1996). “Understanding Economic Policy Reform.” *Journal of Economic Literature* 34(1), 9–41.
- [67] Sachs, Jeffrey D., and Andrew Warner (1995). “Economic Reform and the Process of Global Integration.” *Brookings Papers on Economic Activity* 1995,1, 1–95.

- [68] Somerville, R. A. (2007). “Housing Tenure in Ireland.” *Economic and Social Review* 38(1), 107-134.
- [69] Svensson, Jakob (1999). “Foreign Aid and Rent-Seeking.” *Journal of International Economics* 51, 437–461.
- [70] Streeck, Wolfgang and Christine Trampusch (2005). “Economic Reform and the Political Economy of the German Welfare State.” *German Politics* 14 (2), 176.
- [71] Tornell, Aaron and Philip R. Lane (1999). “The Voracity Effect.” *American Economic Review* 89, 22-46.
- [72] Torres, Francisco (2006). “A Convergência Monetária: Portugal e a União Europeia.” *Working Papers de Economia* 39, Departamento de Economia, Gestão e Engenharia Industrial, Universidade de Aveiro.
- [73] Vamvakidis, Athanasios (2007). “External Debt and Economic Reform: Does a Pain Reliever Delay the Necessary Treatment.” *IMF Working Paper* No. 07/50.
- [74] Vis, Barbara (2010). *Politics of Risk-taking: Welfare State Reform in Advanced Democracies*. Amsterdam University Press, Amsterdam.
- [75] Whelan, Karl (2010). “Policy Lessons from Ireland’s Latest Depression.” *Economic and Social Review* 41(2), 225-254.
- [76] Yared, Pierre (2010). “Politicians, Taxes and Debt.” *Review of Economic Studies* 77, 806–840.

Figure 1: Convergence in yields

Government bonds, 10-year yields. Monthly: 1993M01-2005M12. Source: Eurostat

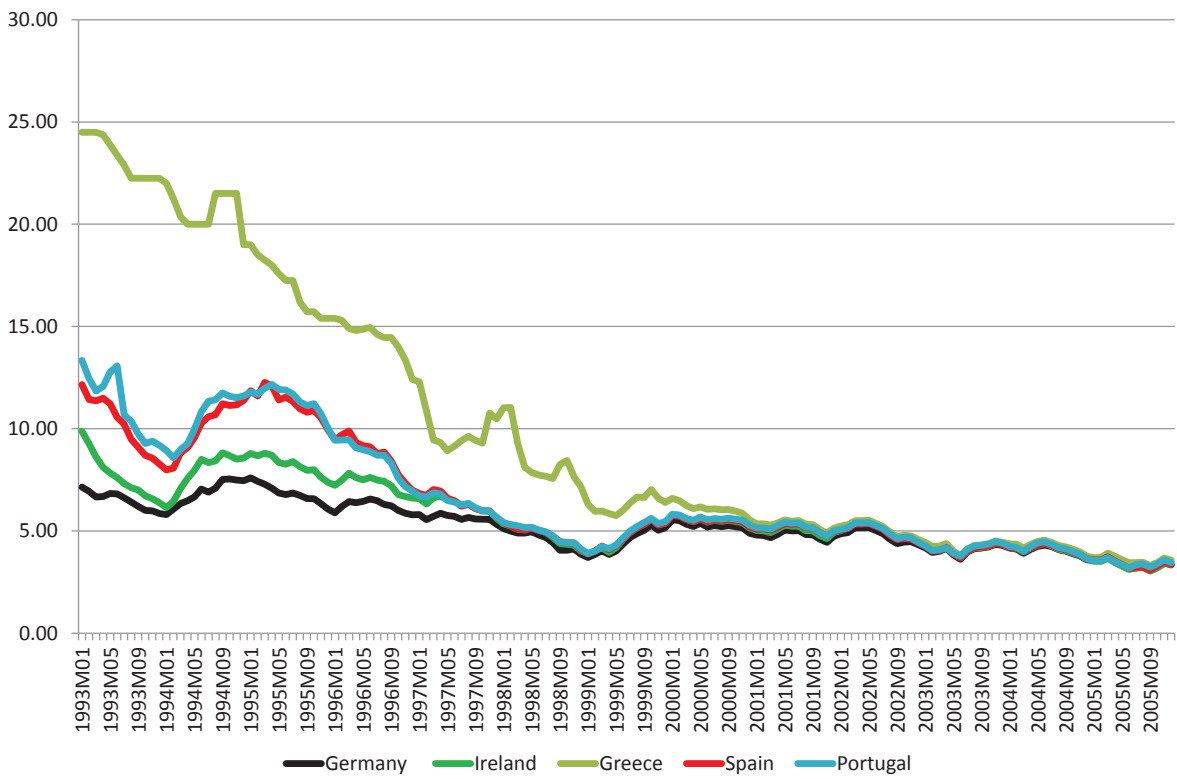


Figure 2: Demographic factors

Percentage of the population between 15 and 64 years of age. Annual data: 1956-2011. Source: OECD

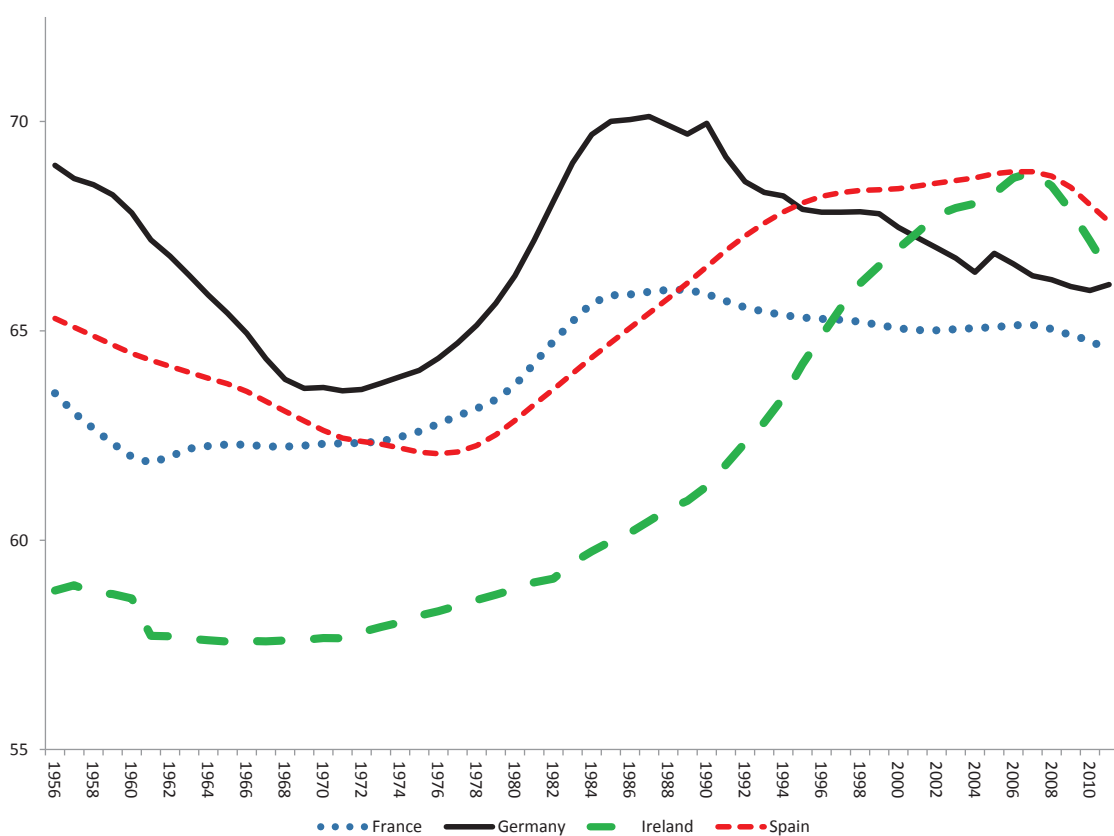


Figure 3: **External indebtbness and private credit**

Panel A: Net International Investment Position (NIIP) as a percentage of GDP. Source: Eurostat.
 Panel B: Loans to other residents granted by monetary financial institutions as a percentage of (annualized) GDP. Quarterly: 2000Q1-2010Q4. Smoothed with an MA-4. Source: Eurostat

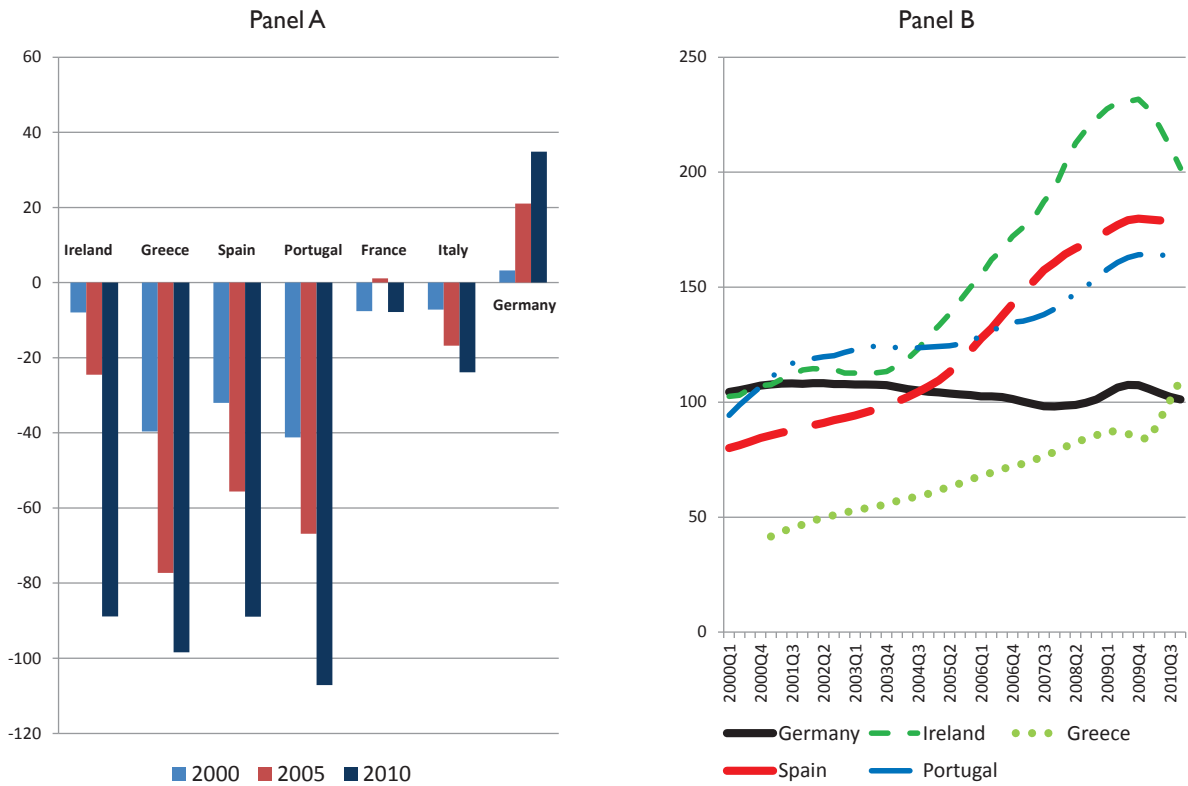


Figure 4: Spain

Panel A: Income tax revenues and value-added tax (VAT) revenues in billions of euros. Monthly: 1996M01-2012M11; smoothed with an MA-12. Source: Ministerio de Hacienda y AA.PP., Agencia Tributaria. Panel B: TFP (value-added-based) growth, Total Manufacturing, 1995 = 100 for Germany and Spain. Source: EUKLEMS database, November 2009 release, March 2011 update. Panel C: Loans to the private sector by banks and cajas as a fraction of loans to the private sector by credit institutions. Monthly: January 1962 to November 2010. Source: Bank of Spain. Panel D: Credit to other resident sectors by credit institutions as a fraction of GDP. Quarterly: 1974Q4 to 2010Q2. Source: Bank of Spain and INE.

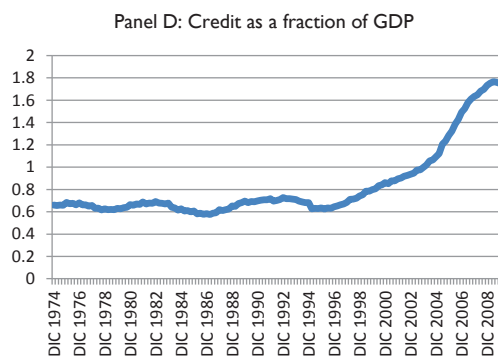
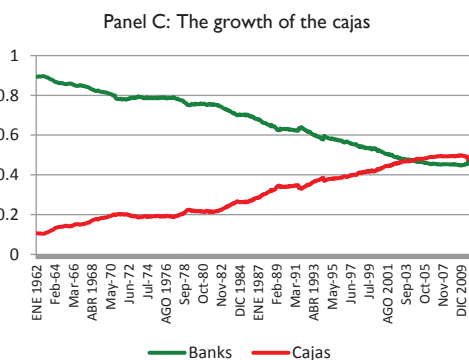
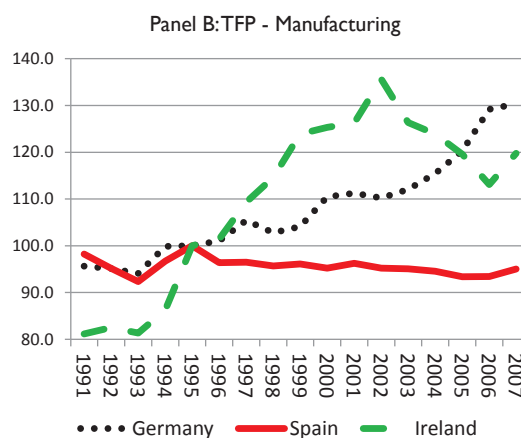
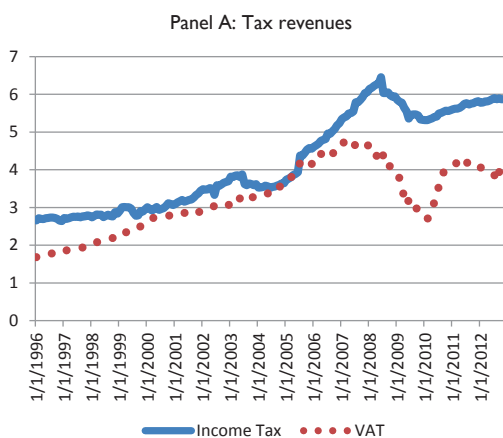


Figure 5: Ireland

Panel A: Unemployment rates in Ireland and Spain. Annual: 1980-2012. Source: IMF. Panel B: Real interest rate. Source: International Monetary Fund, International Financial Statistics and data files using World Bank data on the GDP deflator. Panel C: Income tax plus employee and employer contributions less cash benefits, married couple at 100 percent of average earnings. Tax burden as a percentage of labor costs, one-earner married couple with two children. Source: OECD. Panel D: Total Assets of Anglo Irish Bank as a percentage of Irish GDP. Source: Anglo Irish Bank Annual Reports and IMF.

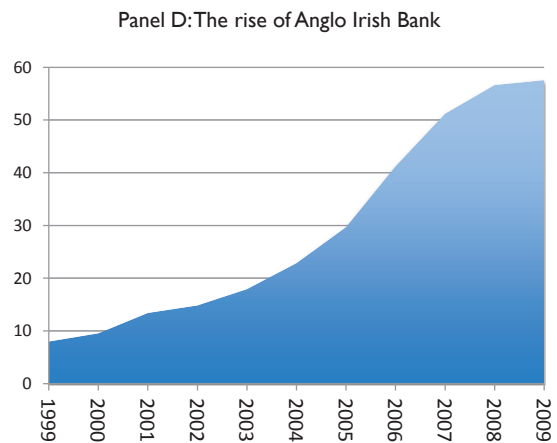
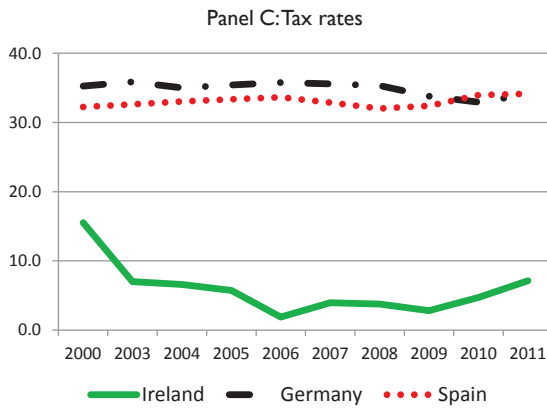
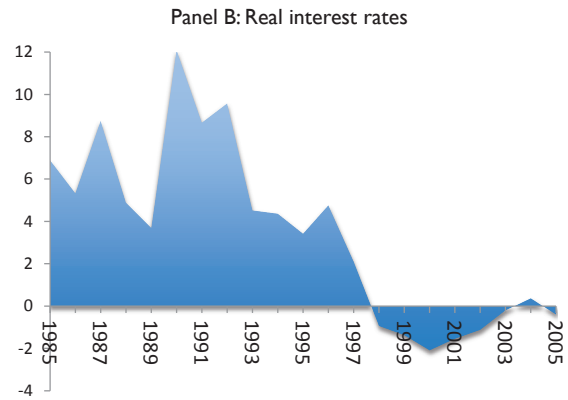
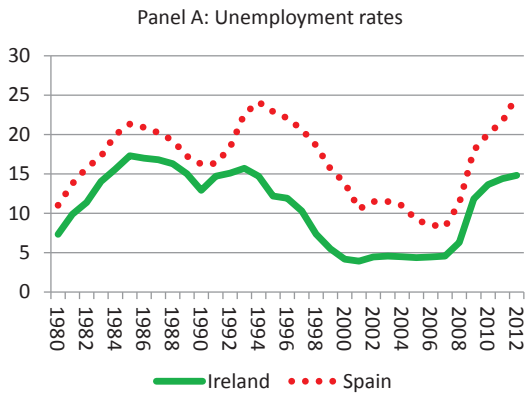


Figure 6: Greece

Panel A: Gross pension replacement rates: average earners. Source: OECD, Pensions at a Glance, 2011. Panel B: Projected public pension expenditure as a share of GDP. Source: OECD.

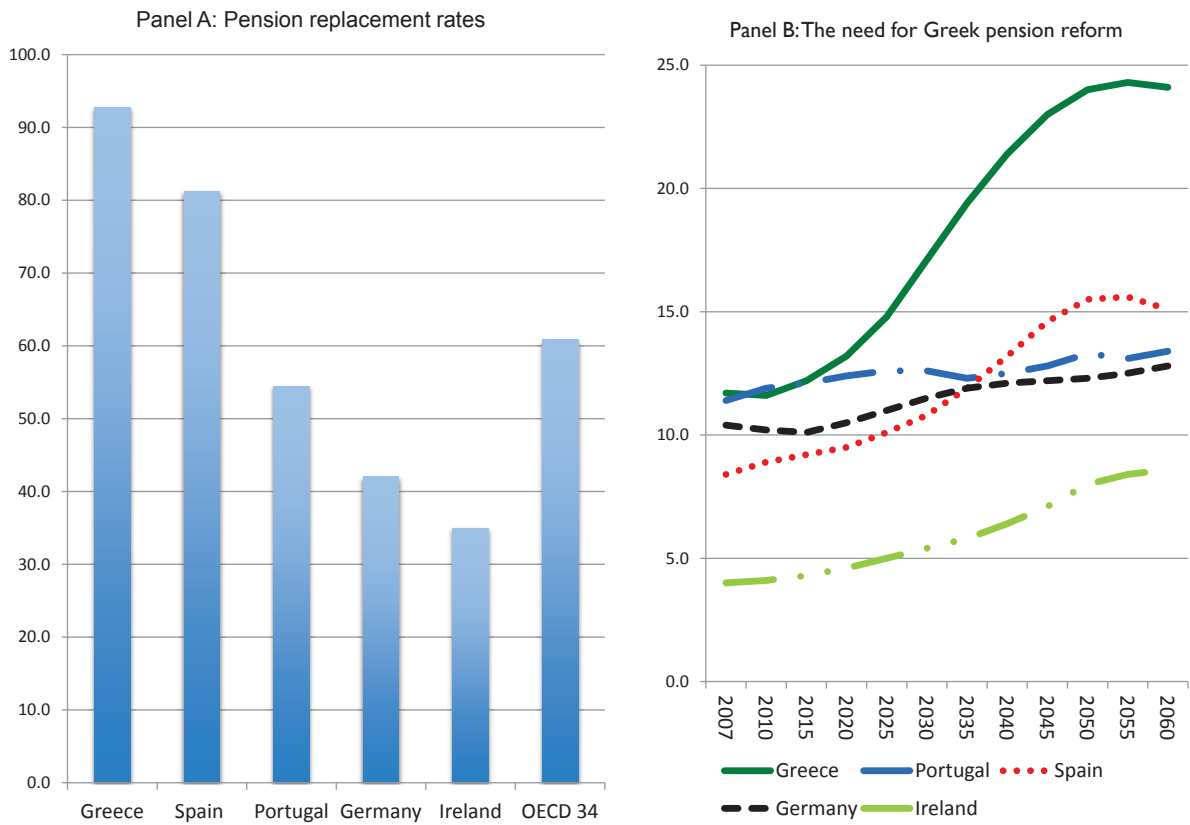


Figure 7: Portugal

Panel A: Real GDP per capita, Portugal vs. Spain (dotted line). Annual: 1993-2011. 1993=100 Source: OECD.
 Panel B: General government debt (dotted line; left axis) and interest rate payments (right axis) as a percentage of GDP. Data source: Marinheiro, C. F. (2006), "The sustainability of Portuguese fiscal policy from a historical perspective," *Empirica*, 33(2-3), 155-179. Annual: 1980 - 2010 .

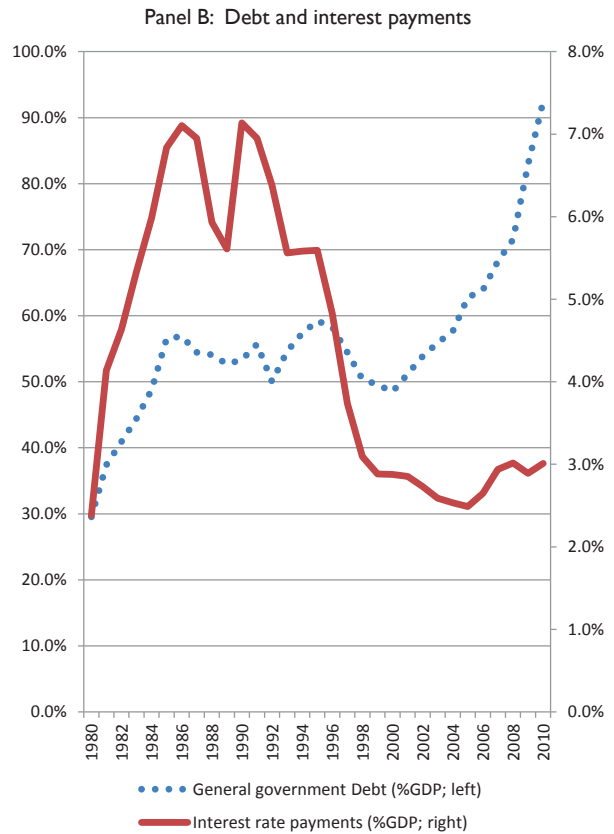
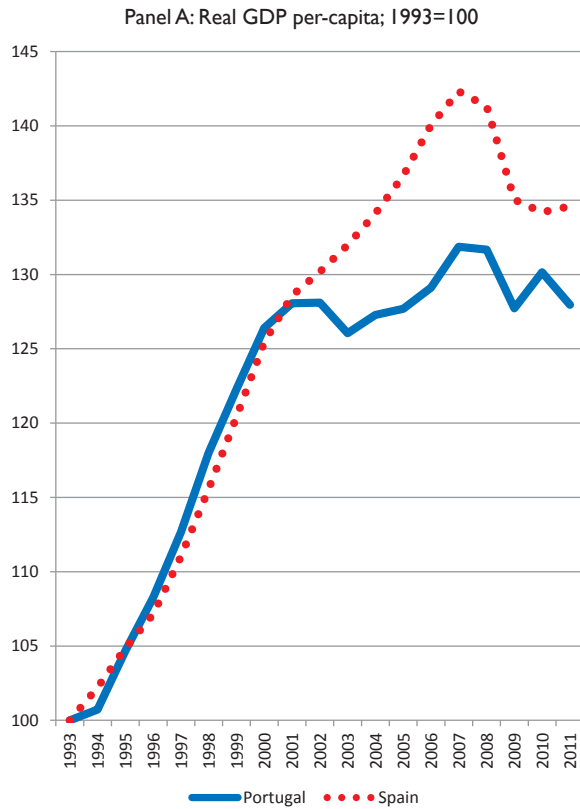


Figure 8: **Germany**

Panel A: Combined social insurance contributions (unemployment, health care, and pension) as a percentage of gross wages. Annual: 1981-2003. Source: Streeck and Trampusch (2005), Table 1. Panel B: Federal subsidies to the pension insurance fund as a percentage of the total revenue of the the fund. Annual: 1981-2003. Source: Streeck and Trampusch (2005), Table 2. Panel C: Residential property prices; all dwellings; index 100 in 2010; Bundesbak calculations based on data provided by Bulwiengesa AG. Annual: 1990-2011. Source: BIS. Panel D: Unemployment rate. Annual: 1991-2011. Source: IMF

