

# What Happened in Cyprus?

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## Abstract

This is a case study of how a country nearly reached bankruptcy in March 2013, within five years from entering the Eurozone. The magnitude of the requested assistance is extremely large relative to GDP (100%) and studying this event provides useful lessons for avoiding such crises in the future. The crisis resulted from a worsening European economic environment (especially in Greece), bad choices with regards to public finances, weak corporate governance within the local banking sector, inadequate and/or difficult regulation of cross-border banking, worsening competitiveness, and bad political decisions at the European and, especially, the local (Cypriot) level. Local politics, reflected in short term political calculations and/or inadequate understanding of the magnitude of the crisis, delayed corrective action for 18 months until election time, making a bad situation almost impossible to deal with. Overconfidence can be one behavioural explanation for why local politicians ignored the dramatic costs of inaction.

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## 1. Introduction

Between March 15 and 25 2013, Cyprus agreed to a bail-in solution in recapitalizing its banking system (around 7 billion euros). That was the Cyprus-financed part in an estimated 17 billion euros package agreed between the Cyprus government and the Troika (the International Monetary Fund (IMF), the European Central Bank (ECB) and the European Commission (EC)). The total package, while small in absolute amounts, was large relative to Cyprus' GDP (100%). Around 10 billion euros (57%) would go towards the rollover of expiring debt and budget deficits until 2016 and the remainder (bank-financed part) earmarked for the recapitalisation of the banking system.<sup>2</sup>

As a result of the final resolution, for the first time in the Eurozone, uninsured depositors would be called upon to recapitalize their bankers. For the first time, capital controls would need to be imposed within the Euro-Area, effectively devaluing euros in Cyprus.<sup>3</sup> For the first time, the proposal to tax insured deposits would be recommended, and deposit insurance within the Eurozone would only be saved (for the wrong reasons)<sup>4</sup> by the Cypriot parliament. Prominent economists like Paul Krugman explicitly argued that it was in the interest of a small open economy like Cyprus to leave the euro<sup>5</sup>. Forecasts of economic doom (a thirty percent drop in GDP) were widely cited in the media given the solution in March 2013<sup>6</sup>. Television stations from around the world showed up expecting fights when banks would re-open ten working days after the banking holiday, and the negative publicity hurt tourism arrivals for 2013.

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<sup>2</sup> The Cyprus government deemed the option of using certain clauses in its sovereign bonds to delay or cancel payment to its creditors as too confrontational. Buchheit et al (2013) discuss this option.

<sup>3</sup> The Cypriot finance minister would say at the time, perhaps inadvertently, that the only safe euros were the ones in one's pocket.

<sup>4</sup> The Cypriot Parliament was under the illusion that a strong "No" would illustrate how systemic Cyprus was and therefore the threat of contagion to the rest of the euro-area could secure a better deal. However distorted this thought process sounds with hindsight, one must remember that the vote was taken without any prior discussion, just 48 hours after it was announced, a textbook example of an "unexpected event."

<sup>5</sup> [http://krugman.blogs.nytimes.com/2013/03/26/cyprus-seriously/?\\_r=0](http://krugman.blogs.nytimes.com/2013/03/26/cyprus-seriously/?_r=0). Most locally-based economists disagree with this thesis because they view Cyprus as a small open economy that takes terms of trade as exogenous. Cyprus imports raw materials as an input to everything and with tourism at full capacity, devaluing by 50% will just double costs and halve revenues. It is for these reasons that Cyprus never used devaluation as a way to become competitive. Syrinchas (2008) provides further discussion of why using the exchange rate relative to inflation-stable major partners can achieve price stability for a small open economy like Cyprus, and why this policy has been followed almost throughout Cyprus' recent economic history.

<sup>6</sup> The magnitude of the final bailout indicates strongly that there is no unique explanation to what Zenios (2013) labels the "perfect crisis". Rather, a combination of factors, both local and international, both exogenous and endogenous, over a long period of time, contributed to the end result.

One particular aspect of the crisis that might not be widely appreciated concerns the delay in reaching an agreement with the Troika. Figure 1 illustrates this delay using credit default swap (CDS) spreads for the countries that asked for assistance (Spain, Greece, Ireland and Portugal), while also showing the time between assistance sought and assistance agreed for these countries. According to these numbers, Cyprus should have asked for help in the summer of 2011, and have concluded the deal within three weeks, as all the other countries had done. Instead, agreement was not sought until the end of June 2012 and agreement not concluded until March 2013, after elections were held in February 2013 and in the first month of a new government. In the meantime, Figure 2 illustrates that the unemployment rate doubled (from around 8% to 16%) between the summer of 2011 and March 2013, whereas the respective Euro area rate was approximately constant. The economy was therefore in free fall, with all the negative consequences for fiscal finances and the banking system.

The dramatic delay and conclusion of the negotiations between the Troika and the Cyprus government in March 2013 generates many natural questions:

- (a) What happened in Cyprus?
- (b) Why did these events happen in Cyprus?
- (c) Could these disastrous economic events have been avoided?
- (d) What explains the delay in reaching an agreement, and was this delay avoidable?
- (e) What are the lessons for currency unions, and the Euro-Area in particular?
- (f) What are the lessons in preventing crises of such magnitudes from arising in the future?
- (g) What are the lessons for crisis management once such crises erupt? Are there any specific events and/or circumstances and/or institutional details that both local and international policy makers should pay special attention to?
- (h) What are the lessons for the future of banking union in the Euro-area?

What follows is my attempt to address these questions.<sup>7</sup> Crises like this generate untold personal suffering through higher unemployment (especially among the young), imply a collapse in public services (health and education), disproportionately affect the poorer and most vulnerable segments of society, and might affect negatively the welfare of a whole generation. I am convinced that having a better understanding of the answers to the questions posed above can prove useful in avoiding similar economic and policy disasters in other countries around the world.<sup>8</sup>

Section 2 discusses the underlying macroeconomic imbalances over a number of years (the “crisis brewing” period) and section 3 discusses and interprets the important events during the last 18 months of the crisis (the “crisis management” period). Section 4 asks why the end result was so harsh and section 5 offers possible lessons from this crisis for policy makers. I have included a glossary of acronyms and a chronological timeline of the main events at the end of this paper.

## **2. Macroeconomic Imbalances**

### **2.1 Fiscal Imbalances**

It is useful to start the story in 2004. Cyprus entered the European Union (EU) on the 1<sup>st</sup> of May 2004 and immediately embarked on plans to enter the Eurozone (all countries entering the EU in the 2004 wave are obliged to enter the Eurozone at some unspecified point in the future, if and when they satisfy the economic criteria for entry). Between 2004 and 2008 the economy was growing briskly on the back of foreign demand for real estate properties, as investors yearned for yield in the era of “The Great Moderation”. Real GDP growth averaged around 4% y-o-y in 2004-2006, and was 4.8% in 2007. On 1<sup>st</sup> January 2008, Cyprus entered the Eurozone.

Eurozone entry meant that monetary policy independence was surrendered to the European Central Bank (ECB). Surrendering exchange rate flexibility and the ability to set short term interest rates, should have implied that fiscal

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<sup>7</sup> Fiona Mullen offers an account with many of the themes also covered in what follows: <http://www.financialmirror.com/research-details.php?rid=32206&rt=News>.

<sup>8</sup> There have been many commentators on the Cyprus crisis in real time and many of them are journalists and concerned citizens. A useful blog with substantial information about the events and various op-ed pieces is the one maintained by Alexander Apostolides: <http://economicscyprus.blogspot.co.uk/>.

independence would be safeguarded at all costs since it was the last lever of independent economic policy in the country. That is, it should have been the case that the fiscal authorities should have become a lot more careful in maintaining their ability to finance a downturn.

Instead, the government that got elected in February 2008 took a decided turn to the left, increasing social transfers, year after year for the next four years. Figure 3 depicts the Cyprus government debt to GDP from 1990 to 2012. The trend between 2008 and 2012 is clear. In the end of 2008 the debt to GDP stood at 48%, but by the end of 2012 it finished at 88% (including a 10% bailout of the second biggest bank in June 2012). In the span of 4 years, that is, the debt to GDP effectively rose from 48% to 78%, an unprecedented increase in peace-time history at such a short period of time, either by international standards or by Cypriot economic history, as Figure 3 demonstrates.

Figure 4 illustrates tautologically where the debt increase came from: an increase in both primary and total budget deficits. The dotted lines in the Figure illustrate the years of Presidential elections. The primary balance was positive on average between 1995 and 2008, and in 2007 finished at a large positive 6% reflecting tax revenues from the real estate boom, a one-off tax amnesty and a tighter control of the budget by the then President Papadopoulos as a way to meet Eurozone entry criteria (a budget deficit below 3% to GDP). With the election of President Christofias in February 2008, however, social transfers increased dramatically as the new leftist government did not see any need to be “stingy with the government purse”, a straight reference to the expenditure policies of President Papadopoulos and his finance minister, former World Bank economist, Michalis Sarris.

In theory, a large increase in government debt is not necessarily bad, if the increase temporarily reflects a weakening economy or productive government expenditures (in health or education, for example). Figure 5 dispels the weakening economy hypothesis: real GDP growth slowed after 2008 due to the global economic crisis and the worsening European sovereign debt crisis but real GDP growth was slightly positive in 2010 and 2011 and around minus 2% in 2009 and minus 2.2% in 2012. Figure 6 illustrates that government tax revenues did not collapse from lower GDP growth: total government revenue slightly decreased in 2008 from 42% of GDP to around 40% of GDP in 2009 but

remained stable at that point until 2012. On the other hand, total government expenditures increased from around 41% of GDP in 2008 to 46% of GDP in 2009 and stayed at that higher level until 2012, explaining the budget deficit, around one billion euros per year every year from 2009 onwards.

Where did these higher government expenditures (reflected in higher budget deficits and expanding government debt) go? Figure 7 decomposes total government expenditure between wages, capital expenditure, social transfers, interest payments and other expenses. The total of wages and social transfers rose from 26% in 2008 to 30% in 2009 and remained at that higher level for the next four years, with the biggest rise going to social transfers. Arguably, these were not productive expenditures (stark examples involved an Easter allowance to all pensioners or a large increase in housing subsidies to refugees, both without any means-testing).<sup>9</sup> Table 1 produces the actual numbers and shows how the 5% increase in government expenditures to GDP between 2007 and 2012, can be decomposed into a 3.43% increase in social transfers, a 1.19% increase in public sector wages, and a 0.24% increase in interest expenses. This already happened by 2009, where the numbers are even starker, since with lower interest rate costs (-0.5%) all categories of government expenditure are higher, totalling to the total 4.92% increase per year relative to 2007.

Large increases in government debt in such a short period of time tend to increase interest rates in a closed economy (Laubach (2009) provides empirical evidence) and also crowd out investment and raise the cost of capital and government debt (for instance, Gomes, Michaelides and Polkovnichenko (2013) in a structural model). Rather than go to the local capital market, the solution followed by the Minister of Finance was to increase foreign debt. Even with the world economic crisis, foreign debt could still be financed at interest rates lower than the domestic ones or the expiring domestic debt.

At the same time, a seemingly innocuous change took place in the summer of 2010: the government debt management office was moved from the central bank to the ministry of finance. Debt management had been done at the independent central bank since 1963, but the government decided to follow

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<sup>9</sup> Means-testing in countries where tax evasion is very widespread are difficult to implement anyway. For a discussion of tax evasion in Greece, see Artavanis, Morse and Tsoutsoura (2013).

international practice where debt management is performed either at the ministry of finance or by independent Debt Management Offices. Reliance on financing sovereign debt from foreign sources became more important in 2009-2010 as the lure of lower foreign interest rates was a temptation too big to resist in the face of falling tax revenues and higher government expenditures. Figure 8 illustrates the large increase in the share of government debt held internationally over this period. Considering the large increase in government debt (figure 3), the data indicate that almost all new or expiring debt was financed by (cheaper but more uncertain, given the worsening European sovereign debt environment) foreign debt.

Increasing the reliance on foreign debt did generate lower interest payments for a few years, as Figure 9 illustrates. Interest payments (either as a per cent of GDP or as a per cent of government revenue) decreased and reached their lowest point in 2010. The debt management office, however, seemed to forget the higher risks from rolling over foreign-held debt. Stein (2010), in his analysis of this issue for the corporate sector, summarizes well what seems to have happened in Cyprus with the following quote, assuming foreign debt tends to be more short-term, as was the case in Cyprus: “Former Treasury secretary Lawrence Summers describes government financing behavior along just these lines: “I think the right theory is that one tries to [borrow] short to save money but not [so much as] to be imprudent with respect to rollover risk. Hence there is certain tolerance for [short-term] debt but marginal debt once [total] debt goes up has to be more long term.”

Ex post, it does seem that having debt management too close to the politicians was a mistake as information about the dangers from financing the ballooning government expenditures was hidden from the public. In fact, the head of the Debt Management Office, Faedon Kalozois, explicitly warned in writing the Minister of Finance about these dangers in May 2011, as he testified later, in August 2013. Nevertheless, the minister of finance Charilaos Stavrakis did not heed these concerns. To the contrary, he also boasted in a book he published six months after leaving office in August 2011, that he delayed the downgrade by Fitch for one week in May 2011 until parliamentary elections were held. In those elections, the ruling party increased its representation in parliament by one seat: Cyprus’ Evita moment seemed to be working. One week later the

three notch-downgrade (to below investment-grade status) meant that Cyprus could not borrow on international capital markets any more as sovereign yields soared above 15%, but the political cost for the government was (still) nowhere to be seen.<sup>10</sup>

## **2.2 Banking Imbalances**

Rapidly developing fiscal imbalances were not the only problem facing Cyprus, it is just easier to isolate their exogenous nature coming from the 2008 Presidential election and the worsening European sovereign debt crisis. Cyprus entered the European Union on May 1<sup>st</sup> 2004 but one issue of major contention prior to the 2004 negotiations was the low tax rate on profits for offshore companies (4.25% since 1976). Cyprus negotiated this up to 10%, a rate that from 2004 onwards would apply to all companies, both domestic and foreign, registered in the country. This low tax rate had encouraged a substantial number of companies to use the island either as a local corporate base (Moody's and Thomson Reuters have regional offices in Cyprus) or as a tax structure base, where working capital goes through the country for a short period of time to be re-invested in another country. As a result, by 2011 Cyprus was the country with the second largest foreign direct investment into Russia, mostly because Russian companies used local legal and accounting services to invest in Russia through Cyprus.

During the decade of low global yields, Cyprus banks also attracted large foreign deposits through the lure of low taxation and high deposit interest rates. It should be noted that there is a misconception internationally that all foreign deposits earned very high yields forcing the Cypriot banks to make risky investments abroad to cover their funding costs. More empirical work, with data that is not readily available, is needed to ascertain the validity of this hypothesis. The working capital balances going through the banking system were short-term liquid deposits staying in the system between three to six months and as a result earned minimal yields as the main benefit came from lower taxes. The ratio of longer-term foreign deposits earning higher interest

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<sup>10</sup> The 2013 IMF World Economic Outlook (<http://www.imf.org/external/pubs/ft/weo/2013/02/pdf/text.pdf>) structural budget balance for Cyprus (table B7) might seem inconsistent with this analysis. It should be noted that for the 2009-2011 period, the IMF estimates the structural budget deficit to be around 2-2.5 times the deficit of 2008. The structural budget deficit jumped from 1.9% in 2008 to 5.1% in 2009 and was 4.5% in 2010 and 4.0% in 2011.



rates to shorter-term foreign deposits earning lower interest rates is not readily available to shed light on this issue.

A second question is whether the foreign deposits were the result of money-laundering. The perception exists that money-laundered money (primarily from Russia) was parked in Cyprus with a longer-term horizon to earn higher interest rates. Ledyeva et. al. (2013) argue empirically that “round-trip investors (namely from Cyprus and British Virgin Islands) tend to locate in more corrupt Russian regions ... [pointing] ... to the conclusion that there is a strong link between round-trip investment and corruption money laundering.” Nevertheless, even if the empirical results are taken at face value, can one reject the opposite hypothesis? Namely, that because an investor is located in a very corrupt Russian (or Ukrainian for that matter) region, the investor will have an additional incentive to protect their investment by operating in a system under English law, with a less corrupt, and more efficient legal system, with good value-for-money accounting and legal services.

In an interesting paper, Johannesen and Zucman (2014) use the G20 April 2009 push towards tax havens to sign information exchange treaties as an exogenous change (since the push was motivated by the global crisis) to assess how the treaties affected bank deposits in tax havens. They find repatriation of funds across tax havens (from ones that signed many treaties to ones that signed fewer). Their Figure 5 shows the rapid increase in deposits for Cyprus between the end of 2008 and 2011, with Cyprus signing the fewest number of treaties in this period and experiencing one of the highest growth rates in deposits over this period (60%). One issue here might be that Cyprus already had a high stock of treaties and therefore one should be looking at that as well, while the increase in deposits in this period also reflects the perception (at the time) of Cyprus as a safe haven vis-à-vis Greece.

Regardless of the origin and maturity of these deposits, it is a fact, however, that Cypriot local banks had these deposits and used them as a funding source to finance growth and investment both domestically and abroad. Figure 10 shows the end of year deposit to GDP ratio in the banking system. The figure illustrates the large growth of these deposits coming from non-monetary and financial institutions (non-MFIs) after 2005 and the split between local and foreign deposits. It is useful to isolate two key increases during this period.

Between 2006 and 2007 there is a first wave and between 2009 and 2010 there is a second increase of around 55% of GDP.

Figure 11 illustrates that since 2006 a substantial increase in loans to GDP occurred that essentially lags by one to two years the increase in deposits to GDP, the main source of funding for loans in the Cypriot banking sector (figure 10). The increase can be isolated in two waves: between 2006 and 2009 and between 2010 and 2012. In the first wave, the deposit to GDP ratio rose from 275% to around 325% (2005-2007, figure 10), but the loans to GDP ratio increased from around 220% to 340% (2006-2009, figure 11). A proportionately smaller increase in loans to GDP occurred between 2010 and 2012 (but still around a 50% loans to GDP increase from 350% to 400%, figure 11), which was preceded by a similar increase in deposits to GDP between 2009 and 2010 (again from around 350% to 400%, figure 10).

How can these two credit waves be explained? The first can be traced to the merger between a local Cypriot bank and a Greek one. Specifically, on January 10 2006, Laiki (the second largest commercial bank in Cyprus) announced the sale of the 21.16% share held by HSBC (acquired in the early 70s). The central bank governor until 2002 (and with 22 years the longest-serving Cypriot governor) Afxentis Afxentiou, called this “an unpleasant development” back in January 2006, regardless of who would purchase the share since HSBC was the second biggest financial institution in the world at the time. There are various hypotheses why this HSBC withdrawal from Cyprus took place. HSBC might have disliked the accusations or rumours of money laundering in Cyprus for various Milosevic-linked companies, or the continuing division of the island and how that affected business in Turkey. The most credible explanation (that does not exclude the ones mentioned previously) probably has to do with corporate governance issues. HSBC wanted the CEO of Laiki, Kikis Lazarides, to step down and demanded better corporate governance. Lazarides, who had built up the bank in the last 36 years and had been involved in the banking system since 1963, when he had started working for the central bank, probably felt that this was treatment that he did not deserve.

At the same time, the ample liquid deposits and growing business from Russia attracted the attention of many Greek banks. In the end, HSBC’s share was

sold<sup>11</sup> to the Dubai Investment Fund and a London-based hedge fund (Tosca fund), but events later showed that Andreas Vgenopoulos, a Greek businessman<sup>12</sup>, was the main decision maker. Replacing the English tradition in corporate governance with the Greek version of it proved, with hindsight, to be a very risky proposition. In the next few years, Vgenopoulos used his power to extend substantially the loan portfolio in Greece, funded to a large extent with the deposits from Cyprus. The fact that Laiki became a state-owned bank in June 2012 indicates that this expansion was highly risky<sup>13</sup>.

In 2008, a similar mistake seems to have happened with the biggest bank in the country, the commercial Bank of Cyprus (BoC). In 2008, right after the Presidential elections, former minister of finance (until February 2008) Michalis Sarris was encouraged to apply to become chairman of the Board of Directors of the Bank of Cyprus. Nevertheless, Sarris lost to Theodoros Aristodemou, one of the largest real-estate developers in the country. To be fair, Aristodemou had recently sold a large part of his firm (Aristo Developers) to Dolphin Capital and also owed a substantial stake in the BoC. But the conflict of interest between a large borrower (albeit also a shareholder) becoming a chairman of the BoC was too large to have been ignored.<sup>14</sup>

But there was another, more puzzling, second wave of credit growth (between 2010 and 2012). Specifically, with the introduction of the euro in 2008, the CBC had to make a decision with regards to the liquid reserves as a proportion of

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<sup>11</sup> There is disagreement whether the central bank governor at the time, Christodoulos Christodoulou, could have stopped this merger from going through. We do know that right before Christodoulou's term in office ended in April 2007, Vgenopoulos asked President Papadopoulos to re-appoint Christodoulou as Governor. We also know that a company owned by Christodoulou's daughter received a one million euro payment in Greece in the summer of 2007. Christodoulou claimed in an interview in the summer of 2013 that the money was given for consulting services to be offered over the next ten years. The consulting would be to a company based in Greece that had substantial loans from Laiki (around half a billion euros). In March 2013 newspapers reported that Christodoulou was facing ten charges with regards to this transfer: <http://cyprus-mail.com/2014/03/23/former-cbc-governor-facing-charges/>.

<sup>12</sup> The 2007 Laiki annual report, <http://static.cyprus.com/MarfinAnnualReport2007.pdf>, contains further details. The merger between Laiki, Marfin and Egnatia was completed on 30 June 2007.

<sup>13</sup> This Reuters story describes the relationships between banks and customers in the Greek banking system: <http://www.reuters.com/article/2012/06/13/us-greece-marfin-idUSBRE85COM920120613>.

<sup>14</sup> The conflict between wearing a developer's hat while also being the chairman of the largest commercial bank can be seen in an interview Aristodemou gave to Stockwatch on April 6<sup>th</sup> 2009. The reporter asks whether the loans to the developers will be repaid and the chairman of the biggest commercial bank reassures that the banks have been very careful with loan provision to the developers: [http://www.stockwatch.com.cy/ngcontent.cfm?a\\_name=news\\_view&ann\\_id=99126](http://www.stockwatch.com.cy/ngcontent.cfm?a_name=news_view&ann_id=99126).

local and foreign deposits. Up to the point of Eurozone entry on 01/01/2008, there were two main indicators that the CBC was using to control liquidity (essentially the ability of the banking sector to lend). The first was a precautionary liquidity constraint: in the Cypriot pound era 0% (75%) of local (foreign) deposits could not be lent out but were to be held in liquid reserves. The second was a mismatch constraint that put stringent requirements on the ability of local banks to lend short-maturity deposits. Unfortunately, the maturity structure of deposits is not publicly available and therefore I cannot compute how binding this maturity constraint was (there are suggestions that it was more binding than the precautionary liquidity constraint).

With the Cypriot pound, the definition of a local currency deposit was clear. Upon its replacement with the euro, the question arose whether local currency would be defined based on residency of the owner, or not, and whether the same rules should apply to the expanded set of deposits. The CBC decided that all euro deposits would be naturally treated as local (and therefore with a lower constraint). Simultaneously, and presumably to contain the liquidity surge from this change, in November 2007 the CBC increased the constraint from 0% to 25%<sup>15</sup> for local deposits as of 01/01/2008. On 30/09/2008, presumably given the Lehman bankruptcy, the constraints were relaxed from 25% to 20% and from 75% to 70% for local (foreign) ones, effective from 31/03/2009.

Table 2 computes the effect of the liquidity constraint relaxation on the eventual available funding that could be lent out (assuming the mismatch constraint were not binding). Using this liquidity constraint change on the January 2008 available deposits, we find a substantial decrease in liquidity with the euro introduction (January 2008 compared to December 2007, last column). Nevertheless, there is a very large increase taking place between December 2009 and 2010, when there was a 7 billion euros relaxation of the constraint, partly because of the large increase in deposits coming in from Greece (Cyprus was considered a safe haven relative to Greece at the time) and from the sources identified by Johannesen and Zucman (2014). The increase in loans given out between 2010 and 2012 is around 50% of GDP

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<sup>15</sup> This is discussed in the CBC Annual Report of 2007, p.51, where a minimum mismatch ratio was also introduced for very short term deposits for assets and liabilities in euros:  
[http://www.centralbank.gov.cy/media/pdf/NPARE\\_FUNCTIONSOFTHEBANK\\_07.pdf](http://www.centralbank.gov.cy/media/pdf/NPARE_FUNCTIONSOFTHEBANK_07.pdf).

(figure 11), and the 5-7 billion increase in the ability to lend shown in table 2 partly explains this loan to GDP increase.

The central bank did recognize the rapid increase in lending and loans to real estate. In July 2007, contrary to a public outcry and intense political opposition, the down payment requirement on a second home was increased from 30% to 40%. This macro-prudential tool was therefore used in Cyprus substantially before it was muted as a possible financial stability tool in many more advanced economies. The tighter constraint lasted only for a year, however, as the CBC saw the brewing international economic crisis. In that intervening time period, pound sterling (a major trade partner for Cyprus in tourism and second homes) depreciated around 25%, while the worsening international economic situation was clear to the CBC. With the benefit of hindsight, and given the fiscal expansion that was taking place during this period, it seems that the central bank should have kept the tighter constraint for a longer period of time.

The liquidity increase not only led to a local credit expansion but also to other countries (Greece, Russia, Ukraine and Romania). A natural place for banks to expand for diversification reasons was the Greek economy due to the common language and the substantial number of Cypriots living and working there. The previous successful expansion in countries with large Greek-Cypriot diaspora (UK and Australia) gave local banks the additional confidence to rapidly expand in a country that suddenly faced little depreciation risk and was a natural convergence play. Banking sector assets managed to grow to the level of six times GDP, since encouragement (from official ECB publications<sup>16</sup>) towards “financial integration” in a common currency area meant expanding heavily in Greece. As of September 2012, the three largest Cypriot banks had given out in Greece around 132% gross loans to GDP and had a 77% deposit to GDP ratio. Thus, the expansion in Greece was financed partly through Cypriot deposits illustrating how global banks make decisions that can affect the host or originator country (Cetorelli and Goldberg (2012) and Houston, Chen and Yue (2012)). As the probability of Greece exiting the euro rose after 2009, the bank exposure that had been built over the previous 15 years started to negatively affect the state of the Cypriot banking sector.

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<sup>16</sup> <http://www.ecb.europa.eu/pub/pdf/other/financialintegrationineurope200804en.pdf>

The growing banking balance sheets could have been a cause for alarm but it should be noted that there are other countries with even larger banking systems that have done well over the years (Malta, Luxembourg, Hong Kong, Singapore and Switzerland). Nevertheless, as pointed out by Stephanou (2011), a large number of foreign banks operate, on average, in these jurisdictions, helping diversify potential systemic risks from large domestic banks. In Cyprus, the leveraged banking sector was largely domestic.

The ICFBS report also commends negatively on the business method of “advancing loans against collateral (usually real estate) and personal guarantee, with insufficient attention paid to cash flow and ability to repay” (p.5). Artavanis et. al. (2013) make the empirical point that banks in Greece lend based on what they perceive households earn, not on their reported labor income, due to the presence of widespread tax evasion. I do think that this also happens in Cyprus, it is then an empirical question to determine the magnitude of this problem for the main commercial banks.

Finally, there was another imbalance within the local banking system that is relatively unique to Cyprus. Traditionally, around one fifth of the local deposits domestically were held with the Co-operative Sector (Co-ops), but their share in total lending for housing purposes was well above 50%.<sup>17</sup> The Co-ops were never directly under the supervision of the Central Bank, and had a history of bailouts in the last thirty years. Yet, despite that history, and for political reasons, they were protected from competition and probably suffered from even stronger corporate governance conflicts than the commercial banks. This fact has only recently started to get recognized in Cyprus, and this was mostly pointed out by foreign experts, like the Independent Commission for the Future of the Banking Sector (ICFBS) in Cyprus (final report, October 2013). In a *Financial Times* Editorial on November 25 2013, David Lascelles (chairman of the ICFBS) argues that “friendly” co-operative banks hold hidden risks (not just in Cyprus), as they “enjoy political backing and special regulatory treatment”.<sup>18</sup>

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<sup>17</sup> Argyridou,-Dimitriou, Karamanou and Cleanthous-Petoussi (2013), p.246. Tighter loan to value ratios did not therefore apply to Co-ops.

<sup>18</sup> The plight of the co-ops and their structure is quite similar to the Spanish cajas, with the exception that the co-ops in Cyprus were not under the direct supervision of the CBC. Garicano (2012) discusses the political connections in the cajas that are similar to the ones existing in Cyprus as one of the main reasons for failing to act early on developing problems.

## **2.3 External Imbalances**

The EU entry in 2004 and the successful entry in the Euro Area on Jan 1<sup>st</sup> 2008 did generate a decrease in some interest rates and a large increase in external demand for real estate properties. Figure 12 illustrates the downward trend in housing loans interest rates: even though not large, from the 8% nominal (6% real) rate in 1999, the interest rate does decrease to around 5.5% nominal (3% real) by 2012. Nevertheless, interest rates on corporate loans remained high (Figure 13).

With banking liquidity high, with government expenditures rising very fast, with slightly lower housing rates but not corporate loan rates, it is no surprise that the current account deficit took a large negative turn after 2004. Figure 14 illustrates this with the current account deficit reaching minus 15% in 2008, a reflection of the large investment in housing, primarily in the coastal areas, but also of rising non-durable consumption expenditures as a share of GDP. Figure 15 illustrates the rapid rise in consumption as a share of GDP and the falling investment share in the 2006-2012 period (even though residential housing consumption is classified under investment in the national accounts). Basically, the current account deficit was not reflecting productive corporate investments but rather non-productive housing and non-durable consumption expenditures. The relatively low investment to GDP share by historical standards (Figure 15) is another source of concern for the future.

## **2.4 Housing Imbalances**

The prospect of European Union membership even before 2004 had started generating external demand for real estate in Cyprus and this was made even stronger with Eurozone membership. Figure 16 illustrates the growth of real estate prices in Cyprus (index constructed by the central bank in 2010) relative to other countries (graph taken from the September 2013 IMF country report).<sup>19</sup> Despite the large errors that exist in the early part of the index

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<sup>19</sup> It should be noted that a Cyprus housing price index did not exist until 2010. It was eventually constructed by the Central Bank of Cyprus with funding secured by the Association of Financial Institutions and is based on valuation-based data from chartered surveyors, as requested by local banks before making a loan. A hedonic regression approach was followed based on the valuation reports existing at each bank. The comparison across indices should take the different methodologies across countries (primarily transactions-based versus valuation-based) into account, while the data in the earlier part of the series is more sparse and amenable to error. Details regarding the methodology behind the Cypriot index construction can be found here:

construction (valuation data at banks were sparse for this period when the index was constructed in 2010), there is a substantial upward trend in the Cypriot residential housing price index that reflects large external demand, available banking funds (figure 10), robust real GDP growth (figure 5) and lower housing loan interest rates (figure 12).

Cyprus, therefore, followed what happened in other southern European countries (and Ireland): the combination of lower interest rates through Eurozone entry and better guarantees of property rights through EU entry generated a rapid increase in external demand (first from the United Kingdom, then from Russia) for holiday residences. Locals also started borrowing more due to lower interest rates. By 2010 the combination of household and corporate debt to GDP was, within the Eurozone, second only to Ireland: household debt to GDP was 159.2% and corporate debt to GDP was 144.5% (Lane (2012) and author's calculations).

During 2001-2008, a rapid construction boom occurred in Cyprus. In 2007, 37000 persons (around 10% of the labor force) were employed in the construction sector.<sup>20</sup> One may argue that the importance of construction was thus considerably higher in Cyprus than in other EU countries that experienced a property boom before the crisis, namely Ireland (around 3% of labor force). Nevertheless, the number was still lower than the corresponding number in Spain (around 13% in 2007) and it would be interesting to be able to compute the number for Malta or other island economies that rely heavily on demand for second homes from abroad.

The house price growth in figure 16 indicates a property bubble. Nevertheless, the index on labor input in construction shown in Figure 17 makes the sector compare favourably to countries like Ireland that had a more volatile boom and bust. Moreover, the CBC intervention in 2008 on the second home down payment constraint seems to have been timed well, according to this graph and given the information at the time, as the sector contracted after 2008.

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[http://www.centralbank.gov.cy/media//pdf/Methodology\\_EN\\_.pdf](http://www.centralbank.gov.cy/media//pdf/Methodology_EN_.pdf). It should be noted that the Cypriot Land Registry, despite having access to all transactions-based data, has still not proceeded with the construction of its own real estate index.

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[http://epp.eurostat.ec.europa.eu/statistics\\_explained/images/3/32/Construction\\_sector\\_in\\_the\\_EU\\_Member\\_States\\_and\\_Norway,\\_2007.PNG](http://epp.eurostat.ec.europa.eu/statistics_explained/images/3/32/Construction_sector_in_the_EU_Member_States_and_Norway,_2007.PNG)



### 3. Responses and Potential Errors

I do not think many researchers or commentators will disagree with the thesis that there were risks associated with the large Cypriot banking sector as the European sovereign debt crisis and the Greek economic crisis deepened. Given the exposure to Greece, the large private sector debt, the developing fiscal and external imbalances, and the leveraged banking sector, there should be no doubt that the economy was in a precarious position. What generates the very heated debate, however, is the extent of the problem: could anything have been done to avert total collapse and the eventual bail-in of deposits?

The crunch time seems to have started when there was a change in the Governorship of the CBC on May 2<sup>nd</sup> 2012. After that point, events seemed to move faster, but in an asymmetric way. In a speech on June 25<sup>th</sup>, 2012, the new Governor of the CBC pointed out a recent Fitch analysis, with the caveat that the Governor was not necessarily endorsing it, that the Cypriot banking sector needed around 6 billion euros<sup>21</sup> and that Cypriot banks should ring fence their Greek risk. Reuters featured this story on June 28th, 2012,<sup>22</sup> but also had references to eurozone officials putting the Cyprus full bailout cost “up to 10 billion euros – more than half its total output.” By the end of June Laiki was nationalized and the government asked for financial help from the Troika. In the beginning of July, the front page of the major daily *Phileleftheros*, pronounced that “Banks Need 10 Billion Euros”. If banks indeed needed that amount (around 60% of GDP), then banks were insolvent, and the Cypriot government debt unsustainable,<sup>23</sup> if one assumed the banks would be bailed out. If true, how much of that insolvency came from the banks’ own mistakes, how much from political mistakes (local and European) in handling the crisis and how much from supervisory (CBC and ECB) mistakes as events unfolded? If true, how should the crisis have been handled until an agreement with the Troika was reached?

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<sup>21</sup> The speech can be found in Greek on the CBC website:

[http://www.centralbank.gov.cy/media/pdf\\_gr/SPGR\\_GOVSPREECH\\_28062012.pdf](http://www.centralbank.gov.cy/media/pdf_gr/SPGR_GOVSPREECH_28062012.pdf).

<sup>22</sup> <http://www.reuters.com/article/2012/06/28/us-cyprus-bailout-banks-idUSBRE85R13X20120628>.

<sup>23</sup> 80% debt to GDP plus 60% for a bailout just for the banking system would take the country well above the IMF’s comfortable zone given events in Greece.

### **3.1 Banking System**

#### **3.1.1 Investment in GGBs**

PIMCO was instructed in the summer of 2012 to perform a three-year stress to quantify the capital needs of the Cypriot banking system, so that a bail-out agreement could be reached with the Troika (comprised by the IMF, ECB and the EC). Capital estimates were generated under both base and adverse macroeconomic scenarios and under conditions established by the Steering Committee. The forecast extended from 30 June 2012 to 30 June 2015 and offered an estimate of the capital needs for the banking system to have core tier I ratios at 30 June 2015 of 9% (6%) of risk-weighted assets in the base (adverse) scenario. The devil is in the details when such three-year forecasts of capital needs are performed and it is perhaps important to point out that the Steering Committee was chaired by the CBC, 5 members were from the CBC and Ministry of Finance and 5 members were from the Troika.

PIMCO's final calculations for the base scenario involved the cumulation of different losses. One main component of those were that the banks lost 4.5 bn euros from investments in GGBs (Greek Government Bonds), and needed around 5.8bn euros recapitalization in the base scenario. The eventual bail-in for the two major banks was the 5.8bn euros amount and therefore, despite the over-stretched banking sector, it seems that one main problem can be isolated to the investment in GGBs.

The main blow in this dimension came in October 2011, and emanated from the unintended consequences of the Greek Private Sector Initiative (PSI). Through the 79% haircut in net present value of Greek government bonds, 4.5 billion euros (the equivalent of 25% of Cypriot GDP) in bank capital was wiped out. An interesting policy question with regards to regulation arises here. On one hand, according to Basel requirements government bonds get a zero risk weight. On the other, could banks have been taking on "zero risk" investments with substantial yield differentials relative to German Bunds as the "greatest" carry trade ever? (Acharya and Steffen, 2012).<sup>24</sup>

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<sup>24</sup> The empirical and theoretical results in Iannotta and Pennacchi (2013) are also consistent with banks trying to take advantage of capital requirements that are based on credit ratings to boost shareholder value. The moral hazard arises when loan spreads incorporate systematic risk premia but credit ratings do not. The experience of Cyprus illustrates that this moral hazard can also take place for sovereign yields that reflect systematic risk but their credit ratings do not.

Why did the local banks accumulate such large positions (relative to their own equity) in GGBs? Except for the “carry-trade” explanation, there could be “moral suasion by regulators or politicians” in this case in Greece to support the efforts of the authorities to effectively stay in the Eurozone.<sup>25</sup> Battistini, Pagano and Simonelli (2013) add another hypothesis to the above two, namely that home-investments in sovereign bonds by banks can protect the banks from a fall-out of redenomination risk. This particular explanation does not apply to Cyprus as the investments in GGBs were made in 2010, and a euro-exit was more likely for Greece which would make a Cypriot bank’s balance sheet even more vulnerable. Whatever the explanation, it was a mistake to concentrate a large part of one’s equity in one asset class, even if that asset class was government debt with a zero-risk weight according to Basel rules<sup>26</sup>.

### **3.1.2 Contingent Convertibles (co-cos)**

Over the years leading up to the crisis, and as the problems of the banking sector were beginning to show, the banks did start issuing capital. One particular instrument was a contingent convertible: a bond that could be converted into equity under certain conditions. In December 2011, after the PSI debacle, the BoC announced that it needed approximately 1.56 bn euros by the end of June 2012 to reach a 9% core tier I ratio. The BoC had already issued in the previous years 887 mn euros of convertible enhanced capital securities which could be used towards that effect. Vallee (2013) argues that empirically, European banks that had issued co-cos, did weather the crisis better than banks that had not.

What is the potential problem in issuing co-cos then? Co-co bonds were deposit-like instruments that earned a higher rate of return but could be turned into equity under certain conditions (that were essentially satisfied as a result of the PSI one could argue). Moreover, the bonds were sold to the public

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<sup>25</sup> Landon Thomas, in the New York Times, takes for granted that banks had “loaded up on the bonds at the government’s urging”: <http://greekeconomistsforreform.com/wp-content/uploads/2013-06-NYT-Greek-Plan-May-Reward-Some-Bank-Executives.pdf>.

<sup>26</sup> Alvarez and Marshal (2013a) were commissioned by the CBC in August 2012 to investigate the conditions under which essentially the BoC had invested in GGBs. According to the report, the main apparent rationale for accumulating the GGB position was to achieve profit target. Specifically, for the first quarter of 2010, a 25m euro first quarter, profit target was set for the Treasury. The report makes that argument that using cheaper liquidity accessed from the ECB was used to invest in higher-yielding bonds. No mention is made of possible political interference, even though all banks in Greece suffered from the same home bias in GGBs problem. The report was leaked to the press (one link provided in the references) right after it was submitted by A & M.

using a name that in Greek literally translates to “value bonds” (axiografa). These are not value bonds, however, these are bonds that can become equity under certain circumstances (in particular in bad times for the bank). Some unsuspecting customers would later claim that this understanding was not pointed out when they were asked to convert their deposits into bonds. Everything seems to have been done legally in the sense that a prospectus was approved by the local Securities and Exchange Commission (SEC), and around half of this issue was held by institutional investors (who could not claim ignorance). Nevertheless, certain unsuspecting members of the public did become co-co holders, when they thought they were still being depositors with just higher interest rates. When the wider public realized what happened, trust in the banking system became much worse, at a time when trust was crucial in maintaining financial stability.<sup>27</sup>

### **3.1.3 Cooperative Societies (Co-ops)**

There is a second component of the recapitalisation that received less attention in Cyprus because it involved a smaller amount (1.5 billion euros) but, relative to its size in the total banking sector, the amount is quite substantial. This involved the Co-operative sector (Co-op). Given that the Co-ops did not make large loans to developers and they did not own any GGBs, the extent of that recapitalization is proportionately much larger than the recapitalization required by the rest of the banking system, illustrating the substantial problems in that particular segment of the banking system as well. This part of the system was not under the supervision of the CBC for historical reasons, and ironically, they were pretending to be healthy until February 2013. The mistake here was to continue having a non-unified supervision mechanism, and pretend that because the co-ops were small and geographically dispersed around the island, they could not generate a systemic problem.

## **3.2 Politics**

### **3.2.1 Local Political Responses**

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<sup>27</sup> Celelier and Vallee (2014) measure the complexity of structured products in the retail financial market in Europe since 2002 and find a steady increase in financial complexity that is more prevalent among distributors with a less sophisticated clientele.

On July 11<sup>th</sup> 2011 the economy took an unexpected turn for the worse. A cargo of ammunition, that had been confiscated in 2009 under the international arms embargo against Syria, exploded killing 13 people. The cargo was being stored in between a nautical base and the main electricity-producing plant of the country. Immediately, power cuts started affecting negatively the economy and the mood of the country, and full power generation was not restored until 18 months later. The explosion was an accident, but the decision to keep the cargo for two years without making any decision illustrates poor judgement and leadership from the government during that period.

After this event, what followed could be accurately described as the “Cypriot Summer of Discontent.” The minister of finance and minister of foreign affairs resigned by early August, there were mass demonstrations in Cyprus, citizens drove in day-time with their car lights on as a show of public discontent to their government and a government-appointed commission headed by a widely respected lawyer to investigate the events put the blame squarely on the government’s shoulders in general, and President Christofias, in particular.

In the midst of public anger, the government had to also deal with the worsening situation in Greece that was negatively impacting the local economy through trade links and the banking system. Poor judgement by the government continued when the Greek PSI was finalized in October 2011. All political leaders (both local and European) had the data in front of them and could see, or should have seen, the problem that would arise for the Cypriot banking sector. In the case of the Greek banks, the danger from the PSI was dealt with by promising a 50 billion euros recapitalization mechanism through EU money that would come through the HFSF. Something similar should have been negotiated for the Cypriot banks. Unfortunately that was not done. Whether the Cypriot President was alone to blame, or whether European decision makers should also share part of the blame, is an interesting question for European decision makers to ponder.

The continuous downgrades of sovereign debt from the three main rating agencies in 2011-2012 exacerbated the problems of the banking sector, and by implication, the real economy. Higher funding costs were passed on to businesses and consumers, whereas there was more pressure on banks to increase their capital buffers, a manifestation of what Goodhart (2009) calls

“procyclical regulation”.<sup>28</sup> During a boom, any improvement in the credit grades of assets held by a bank, given the constant capital ratio requirements, implies that banks can increase lending. The reverse happens in a recession, so that an economy enters a vicious circle between a credit crunch and further sovereign debt downgrades due to the recession. The failure of the government to understand this connection and take corrective action was another major mistake.

The Cypriot government’s most important mistake, however, was the delay to take action and ask the EU for help, even though Cyprus was without access to international capital markets since May 2011. Figure 1 illustrates, based on credit default swap (CDS) sovereign spreads, that Cyprus should have negotiated assistance in the summer of 2011, and concluded these very quickly. Instead, Cyprus waited until the summer of 2012, when it was effectively forced to do so by the ECB on account of the ballooning emergency liquidity assistance (ELA) to the banking sector.

The cost on the real economy and the banking sector from this delay was immense. Figure 2 illustrates the unemployment rate relative to the rest of the Euro area. From around 8% in July 2011, unemployment surpassed 16% by March 2013 when the agreement with the Troika was signed. During this period, the banks’ balance sheets deteriorated even further, non-performing loans increased even further and the economic situation was left to deteriorate even more.

Why did the government stand by and let this happen? One can plead ignorance about economics (as the then President Christofias would plead in September 2013 to avoid answering questions in a commission set up to investigate the Cyprus crisis). Nevertheless, pleading ignorance about economics is not consistent with the foresight the government was showing behind the scenes. On October 20<sup>th</sup> 2011 (that is, one week before the PSI agreement on Greek debt) the “ECB received a request from the Cypriot Ministry of Finance for an opinion on two draft laws. The first relates to the

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<sup>28</sup> Almeida, Cunha, Ferreira and Restrepo (2014) point out empirically the negative externalities for the private sector and real economic activity sovereign debt downgrades can have since CRAs rarely rate a firm above the sovereign debt rating. Their results are consistent with the greater attention the Cypriot government should have placed on the downgrades.

management of financial crises ... and the second establishes an independent financial stability fund to support the stability of the financial system.”<sup>29</sup>

Combined with the Russian loan negotiated in December 2011, this request seems to contradict the idea that the government was ignorant about economics. Unfortunately, the situation seems to have been more complex than that. A communist government found, in the weakness of the banking sector and in face of the independent central bank, the perfect scapegoats. Intellectually, blaming the “(capitalist) bankers” was easy to push within the party. Practically, the “bankers” did make a lot of mistakes as the GGB discussion illustrates. One can then build an argument for the perfect explanation for rising unemployment: it was all the fault of the “bankers” and the independent central bank and the government was not to blame for anything. With the looming elections in February 2013, the government began a campaign to convince everyone of this, failing to take any action to avert the looming disaster, to which all indicators were pointing. Careful readings of what the CRAs were saying, or comparing the ratings of Cypriot government debt with the ones for Ireland and Portugal, would have been sufficient for the government to negotiate a deal with the Troika as far back as the summer of 2011. Instead, the deal never arrived until the government changed in March 2013.

A clear mistake on the part of the government was the failure to understand the connection between sovereign debt problems and banking sector ones. The government, leading up to the February 2013 election, insisted that Cyprus was suffering from a banking crisis and that was the fault of the independent central bank. Even if this is taken at face value, does that absolve the government from the responsibility of dealing with the crisis? Banking problems can affect the sovereign and vice versa (Gennaioli, Martin and Rossi (2013), Philippon and Schnabl (2013), Acharya, Dreschler and Schnabl (2013)) and the government should have been a lot more proactive in dealing with the problem.

One could argue that the government was not warned sufficiently early about the magnitude of the problem. One might argue that everyone in the country

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<sup>29</sup> The quote is from the introduction of the ECB opinion issued on November 15<sup>th</sup> 2011: [http://www.ecb.europa.eu/ecb/legal/pdf/en\\_con\\_2011\\_93\\_f.pdf](http://www.ecb.europa.eu/ecb/legal/pdf/en_con_2011_93_f.pdf).

was awash with liquidity and could not understand the dangers ahead. I do not have sympathy with this view. There were 21 downgrades from CRAs in the period 2010-2011 until Cypriot sovereign debt reached junk status in June 2012 by all three major CRAs (S&P, Moody's and Fitch) making Cypriot sovereign debt ineligible for repo transactions with the ECB and therefore forcing a higher funding cost on the local banking sector through ELA. Already in February 2011 (two years before March 2013), Moody's emphasized the three major problems of the economy coming from fiscal imbalances, contingent liabilities through the banking sector and competitiveness. The Governor of the central bank sent 19 letters to the President over this period imploring that measures should be taken. In fact, on December 15<sup>th</sup> 2010, ECB Governor Trichet, in a letter co-signed with Governor Orphanides, warned President Christofias<sup>30</sup>: "Although Cyprus' sovereign debt market has a limited size, significant concerns exist. These concerns are particularly relevant in view of the large size of the Cypriot banking system, which may produce negative feedback loops between the financial sector and public debt. Safeguarding market confidence in public finances and in the stability of the financial system has to be a key objective for Cyprus at the current juncture."<sup>31</sup>

There were two other events from politics that are also illustrative of the confusion in handling the crisis. On 30 May 2012 the Cypriot finance ministry requested an opinion from the ECB on the recapitalization of Laiki. The ECB issued an opinion on July 2<sup>nd</sup> 2012, stating that "the ECB considers that the objectives pursued by the support measures may be better achieved through bank resolution tools."<sup>32</sup> Before this opinion was given, the finance ministry proceeded with submitting a bill through parliament to issue a 1.8bn euros government bond (around 10% of GDP), recapitalize Laiki and appoint board directors. This was completed in the end of June 2012, when the government also officially applied to Troika for financial help. Assuming the negotiations with the Troika would be completed within three weeks, as was done in other

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<sup>30</sup> <http://www.protothema.gr/economy/article/269954/o-trise-eixe-proeidopoihsei-xristofia-kai-mperloyskoni/>

<sup>31</sup> I also had written an opinion piece in August 2011 emphasizing that the markets (based on the ratings of Cypriot sovereign debt) were expecting Cyprus to ask for help from the Troika in the foreseeable future: <http://blog.stockwatch.com.cy/?p=698>.

<sup>32</sup> [http://www.ecb.europa.eu/ecb/legal/pdf/en\\_con\\_2012\\_50\\_f\\_sign.pdf](http://www.ecb.europa.eu/ecb/legal/pdf/en_con_2012_50_f_sign.pdf). Section 3.4.



countries, this process could work as the bond the government issued to itself could be replenished with Troika funds and without affecting the other major bank (that also announced at the same time missing half a billion euros to reach 9% core tier I ratio).<sup>33</sup> The government, however, decided to prolong the agony (the President actually attended the London Olympics at this time, while the country started its six month rotating presidency of the EU on July 2st 2012). Laiki eventually ended up under resolution in March 2013, with a substantially worsened balance sheet on account of much higher ELA (figure 18).

The second element comes from the events in March 2013 and could be attributed to the political system in Cyprus (presidential instead of parliamentary democracy). In the first Eurogroup, ignoring the decision to tax insured depositors, a horizontal haircut across all banks was proposed since the Troika was rightly worried about burden sharing. If Cyprus had a parliamentary democracy, given that elections had just been held, a prime minister might have had an easier time getting a version of this tax (without taxing insured deposits) through parliament. Instead, by the time the President returned to Cyprus from Brussels, public opinion against the horizontal haircut had already been formed and MPs did not have the courage to go against the negative collective opinion that had been formed.

### **3.2.2 European Political Decisions**

The Euro Summit in October 2011<sup>34</sup> is known for introducing the idea of Private Sector Involvement (PSI) to make Greek debt sustainable. The problem was that this automatically meant that 25% of Cypriot GDP was effectively wiped out as bank equity from the three SIFIs (systemically important financial institutions) of the country. There was an unintended consequence, as a result, that the Cypriot banking sector was faced with a disproportionate bill, whilst banks in Greece were assured of funding through the HFSF (Hellenic Financial Stability Fund). The same method should have been used for Cyprus (while also punishing “carry-trade” minded executive boards at the banks). The Cypriot

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<sup>33</sup> It should be noted that all these calculations were based on the EBA stress testing exercises at this point in time.

<sup>34</sup> Euro Summit Statement, 26 October 2011:

[http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ec/125644.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/125644.pdf).

President did not ask for this, but his European counterparts, or the economists preparing the PSI “burden-sharing” accounting exercise, should have pointed out this oversight.<sup>35</sup>

But there is also a second decision in that October statement that has received substantially less attention, and also had negative implications about the stability of the Cypriot banking sector. In point 4 of annex 2, it was said that “there is broad agreement on requiring a higher capital ratio of 9% of the highest quality capital ... to create a temporary buffer, which is justified by the exceptional circumstances. This quantitative capital target will have to be attained by 30 June 2012...”. The natural question arises: does it make sense to require that banks increase their core tier I capital ratio within nine months in a recessionary period? Does it make economic sense within the context of a monetary union to follow another (the interest rate policy is one) one-size-fits-all policy? The motivation behind this requirement can be to make banks more careful, attract private investors and reduce uncertainty surrounding the quality of loan portfolios. But then the question naturally arises: is that requirement the correct policy response during a crisis? Should not these capital buffers vary over the cycle, so that they rise in booms and fall in recessions? And if such a change in policy is instituted, are nine months a sufficient time period of adjustment? The issues are discussed in Kashyap and Stein (2004), Hanson, Kashyap and Stein (2011) and Repullo and Saurina (2011) and requiring countries to follow a specific policy regardless of the state of the cycle and political economy calculations does not seem to be the appropriate solution in terms of preserving financial stability.

It should be noted, that in their recent excellent book, Admati and Hellwig (2013) refer to this particular decision in October 2011 as a good example of how the European banking system became safer as a result of the rapid implementation of higher capital ratios within nine months (and that therefore the move to new Basel rules could take place faster than 2019). This is not true for the case of Cyprus, and in the case of Greece this only worked because of the simultaneous deal to create the HFSF. The transition to a new steady state,

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<sup>35</sup> It should also be noted that in annex 2 of the statement, it is said that “if necessary, national governments should provide support, and if this support is not available, recapitalization should be funded via a loan from the EFSF in the case of Eurozone countries.” A decision that was never enforced in the case of Cyprus.

when a financial crisis is brewing, is not easy and policy makers should try to stabilize the ship before introducing more regulatory demands.

### **3.3 Central Bank of Cyprus**

#### **3.3.1 Regulation and Cross-Border Banking**

Unavoidably, for a crisis of this magnitude there must be policy mistakes at different levels. It is of course easier to point out these mistakes with the benefit of hindsight but it is useful to pinpoint these mistakes for the benefit of managing or preventing future crises of this magnitude.

Part of the problem in Cyprus was the existence of banks across different borders (and the main problem arose from the Greece-Cyprus banking relationship). Laiki was the second largest Cypriot bank and in 2006 it effectively came under the control of a Greek businessman, Vgenopoulos. We know that Laiki was nationalized in June 2012 and we also know that the losses of the Greek part of the portfolio were substantially larger than the Cypriot ones (according to the PIMCO calculations). Higher risk taking abroad, when local regulation is more conservative than the one abroad, is consistent with the empirical results in Ongena, Popov and Udell (2013).<sup>36</sup> Vgenopoulos could operate across two different regulators (the central banks of Cyprus and Greece) and across two different political systems not reputed with the highest institutional quality (Greece and Cyprus). Effective regulation of global banks, across different regulatory cultures, with regulators placing differential attention to each bank, and different levels of conservatism, can become quite difficult.

One particular issue that became a major talking point during the election campaign into February 2013 was the conversion of Laiki in Greece from a subsidiary of Laiki Cyprus to a branch in March 2011. This seemingly innocuous change moves regulatory responsibility from the Greek central bank to the

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<sup>36</sup> Ongena et. al. (2013) state as one of their empirical conclusions: “home-country regulation which reduces banks’ profitability in their primary domestic market, ..., leads banks to loosen their lending standards and take on more risk abroad” (p.729). The A&M report (2013b) discusses how Vgenopoulos wanted to make Greece the corporate headquarters of Laiki in 2009 but then was persuaded to change his mind and kept Laiki as a branch in Greece at that point. We know that in July 2009 Vgenopoulos called the Governor of the Cypriot Central Bank a “Dictator” in the Subcommittee on Institutions in the Cypriot Parliament. Details of the exchange (in Greek) can be found here: [http://www.stockwatch.com.cy/nqcontent.cfm?a\\_name=press\\_view&pr\\_id=16026&lang=en](http://www.stockwatch.com.cy/nqcontent.cfm?a_name=press_view&pr_id=16026&lang=en).

Cypriot central bank, and also could move the contingent liability of deposit insurance from the Greek to the Cypriot state. Accepting this change became a major criticism of Athanasios Orphanides<sup>37</sup> for lumping a substantial contingent liability to the Cypriot taxpayer. The CBC asked a forensic experts firm (A & M) to investigate such issues, with their report leaking to the press in March 2013 (A & M 2013b).

It should be noted that the official act from subsidiary to branch happened in March 2011 but according to EU legislation this can be done once a local court examines the application and approves it. This happened in December 2010 and essentially the CBC could not prevent the merger, as the A&M report concludes.<sup>38</sup> Moreover, the recapitalization exercises and European decisions do require recapitalization of either subsidiaries or branches to happen from the mother company. This was another part of the October 2011 decision discussed above that should be emphasized (paragraph 4 in annex 2): “National supervisory authorities ... must ensure that banks’ plans to strengthen capital ... taking into account current exposure levels of the group including their subsidiaries in all Member States...”. Overall, this cross-border banking issue created a lot more anxiety and confusion to the public and was used quite extensively for “banker bashing” during the election campaign, at a time when banking stability was extremely fragile.

### **3.3.2 Regulation and GGBs**

The BoC did make a mistake in allocating a disproportionate amount of its capital equity in GGBs in 2010. The question is whether the CBC should have, or could have, forced the BoC (and Laiki for that matter, that had bought GGBs earlier) to sell a substantial part of their GGB holdings. We do know that ECB President Trichet was very vocal against a Greek PSI,<sup>39</sup> and one wonders what the response would have been if a central bank of a Euro-Area country advised, or forced, the sale of Eurozone sovereign bonds. Ex post, it does look

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<sup>37</sup> In a March 2013 interview with The Economist, Athanasios Orphanides lays out a lot of the issues faced by Cyprus during the last decade: <http://www.economist.com/blogs/freeexchange/2013/03/interview-athanasios-orphanides>.

<sup>38</sup> The A & M (2013b) report includes in the principal concerns of the investigation “whether, given the contemporaneous information, the CBC maintained a desire to prevent the merger” (3.2.2.1). It is not clear to me how the “desire” of an organization can either be proved or disproved, regardless of events on the ground, given the presence of local and EU directives on cross-border banking regulation.

<sup>39</sup> [http://www.greece.com/news/1843/How\\_Trichet\\_threatened\\_to\\_cut\\_Greece\\_off.html](http://www.greece.com/news/1843/How_Trichet_threatened_to_cut_Greece_off.html).

like a smaller loss in 2010 would have been better than the larger loss incurred in October 2011. In real time, invoking the local banking law that might set concentration limits could have worked, but would probably still risk the wrath of the ECB and Greek politicians,<sup>40</sup> while the contagion risks would have been hard to assess ex ante. A more promising approach would have been the complete co-operation between the government in Cyprus and the CBC before the October 2011 meeting. Unfortunately, perhaps due to the state of mind of the government after the Mari incident, this was not forthcoming.

### **3.3.3 PIMCO stress test**

Another more substantive issue involves the choice of PIMCO to undertake the stress-test, the amount of time taken to complete the test and the issue of how transparent should a central bank be when it comes to financial stability. Cyprus officially asked for help on June 25<sup>th</sup> 2012. It was being preceded by one month by Spain. Spain asked Oliver Wyman to complete a top-down stress test for its banking system and this was completed within one month (May 21<sup>st</sup> 2012 to June 21<sup>st</sup> 2012).<sup>41</sup> The bottom-up stress test duly followed and was completed by September 2012<sup>42</sup>. In Cyprus, the PIMCO analysis was not officially submitted until February 2013. By that time, the international press was openly talking about the complications of the bail out given the magnitudes, bail-in possibilities and money laundering, topics that were never on the table in the summer of 2012.

Central banks need to be transparent in their conduct of monetary policy since that is one strong argument supporting their independence. But should there be limits to transparency when it comes to financial stability issues? Cukierman (2009) argues that this should be the case, and perhaps this should have been the case in Cyprus. Once stringent tests of the needs of the banking system are going to be undertaken, it should better be the case that the state has

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<sup>40</sup> One of the executives of the BoC testified in August 2013 that one of the explanations he was given for the purchase of the GGBs was that Greek politicians had called and complained after this executive stated in an interview to Stockwatch in December 2009 that the BoC had sold all its GGBs by that point in time.

<sup>41</sup> [http://www.bde.es/f/webbde/GAP/Secciones/SalaPrensa/InformacionInteres/ReestructuracionSectorFinanciero/Ficheros/en/informe\\_oliverwymane.pdf](http://www.bde.es/f/webbde/GAP/Secciones/SalaPrensa/InformacionInteres/ReestructuracionSectorFinanciero/Ficheros/en/informe_oliverwymane.pdf).

<sup>42</sup> [http://www.mineco.gob.es/stfls/mineco/prensa/ficheros/OW\\_final\\_report%20Bottom-up\\_stress%20final\\_complete.pdf](http://www.mineco.gob.es/stfls/mineco/prensa/ficheros/OW_final_report%20Bottom-up_stress%20final_complete.pdf).

sufficient resources to fill the holes that might be discovered. If that is not the case, the central bank (and the Troika for that matter) need to be extremely careful and be ready to come up with the recapitalization cheque if that is what is needed to prevent a developing bank run. Common knowledge can suddenly create a bank run, perhaps without adding any extra fundamental information and a central bank might need to be aware of this danger.<sup>43</sup>

A separate issue arises with the choice of PIMCO. In October 26, 2011 the EU leaders not only agreed to the Greek PSI but also agreed to increase the core tier I ratio of banks within the EU to 9% by 30 June 2012. Moreover, these should “take into account current exposure levels of the group including their subsidiaries in all Member States” (Point 4 of Annex 2 of Euro Summit Statement).<sup>44</sup> PIMCO was chosen in the summer of 2012 to perform the Cypriot banking evaluation, but BLACKROCK had already done the same analysis for all the banks in Greece (excluding the Cypriot branches there). In the meantime, throughout the summer of 2012, with the redenomination risk from Greece’s possible euro exit at full force, there was substantial discussion among policy makers in Cyprus that the Cypriot banking sector should be “ring-fenced” from Greece. One particular method of “ring-fencing” would be the sale of the Cypriot bank branches in Greece.

Why should the valuation from two different companies, both reputable and credible, matter? This matters because there is no unique way of calculating the capital needs of a banking system (in, or out of, a crisis) three years ahead of time. Differences in methodology will be important, especially if there are discussions of preventing the contagion from Greece to Cyprus. At the end of the day there were substantial differences in methodology that can be gleaned by comparing the publicly available BLACKROCK analysis for Greece<sup>45</sup> and Ireland<sup>46</sup> and PIMCO<sup>47</sup> for Cyprus. PIMCO was substantially more conservative in its approach. For instance, a decision had to be made on whether the value

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<sup>43</sup> Angeletos and Pavan (2007) analyse the implications of heterogeneous information in economies with externalities and emphasize the differential information can affect the volatility of outcomes.

<sup>44</sup> The statement is publicly available here:

[http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ec/125644.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/125644.pdf).

<sup>45</sup> [http://www.bankofgreece.gr/BogEkdoseis/Diagnostic\\_Assessment\\_of\\_Greek\\_Banks.pdf](http://www.bankofgreece.gr/BogEkdoseis/Diagnostic_Assessment_of_Greek_Banks.pdf)

<sup>46</sup> <http://www.centralbank.ie/regulation/industry-sectors/credit-institutions/documents/the%20financial%20measures%20programme%20report.pdf>.

<sup>47</sup> <http://ftalphaville.ft.com/files/2013/04/reportasws.pdf.pdf>.

of properties would be discounted over the three-year horizon of the forecast or not. PIMCO decided to discount the value of such assets at the nominal interest rate of the loan given out on those assets, whereas BLACKROCK decided not to.<sup>48</sup> Over three years, just this simple assumption, can generate a substantial wedge between the valuations across the two organisations for the same assets.

The end result was that the branches of Cypriot banks were sold at PIMCO valuations to Piraeus Bank in March 2013 as part of the Troika deal with Cyprus, mostly driven by the desire to prevent contagion from Cyprus to Greece. Ironically, and unlike the summer 2012 motivation, it was Greece that was being “ring-fenced” from Cyprus with the sale of the branches. In May 2013, Piraeus Bank reported a one-off capital gain of 3.4 billion euros “relating to a negative goodwill contribution following the acquisition of the Greek units of troubled Cypriot banks”.<sup>49</sup> An alternative interpretation of the “negative goodwill” is regulatory arbitrage across valuation methodologies. PIMCO-valued assets could now be valued with the BLACKROCK methodology, thereby making them substantially more attractive. Authorities in Cyprus argued that this was just an “accounting profit” and that time will show whether it materializes into “economic profit”. One can turn the argument to its head: it was “accounting losses” that prompted the sale of the branches. The truth of the matter is that Piraeus share price rose from 1.77 on March 19<sup>th</sup> to 6.54 on May 17<sup>th</sup> 2013 after the one-off profit announcement was made.<sup>50</sup> Table 3 produces the relevant comparisons from the published balance sheets of the major Greek banks and illustrates the magnitude of the sale of the Cypriot branches on the Bank of Piraeus balance sheet.

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<sup>48</sup> A leaked document prepared for the IMF Executive Board Meeting that can be found here [http://www.stockwatch.com.cy/media/announce\\_pdf/May15\\_2013\\_IMF.pdf](http://www.stockwatch.com.cy/media/announce_pdf/May15_2013_IMF.pdf), says that (p.5) “unlike previous exercises in peer countries, PIMCO has used a more conservative methodology in arriving to the final numbers, providing an implicit buffer for a worse than expected macroeconomic environment. Namely, in contrast to comparable test exercises where expected loan losses were calculated on an undiscounted basis, the calculation of expected loan losses under this exercise projected recoveries discounted at the original effective rate of the loan. Also very conservative assumptions were used for estimating the recovery amounts on defaulted borrowers including, particularly, the application of a forced sale discount of 25% on the projected declining market value of property collateral”.

<sup>49</sup> <http://online.wsj.com/article/BT-CO-20130520-707348.html>.

<sup>50</sup> The share price fell subsequently as warrants were issued and recapitalization proceeded with HFSF funding. The rise in the share price partly reflects the recapitalization prospects and the value in the warrants, for the possibility of excess optimism on this issue see the discussion by Pagratis in <http://greekeconomistsforreform.com/financial-system/warranted-subsidy/>.

The question for policy makers that remains is how discrepancies in such valuations can be mitigated and whether this is the correct methodology in calculating capital needs. Given the talk about “ring-fencing” from the summer of 2012, should it not have been the case that the regulators should have insisted on a uniform valuation methodology of the Greek and Cypriot parts of the balance sheet?

### **3.3.4 Emergency Liquidity Assistance (ELA)**

Another issue of contention is the way emergency liquidity assistance (ELA) was given to Laiki Bank in the period leading up to the March 2013 agreement. In October 2013, the ECB published the procedures underlying ELA provision to individual banks<sup>51</sup> and emphasized that ELA provision is the responsibility of the NCB. Figure 18 shows the gradual evolution of ELA and illustrates how ELA rose to 10 billion euros by the summer of 2012. ELA is two-week short term funding on the back of eligible collateral by the asking commercial bank. The ELA application is examined by the national central bank that in turn needs to get it approved with two thirds majority by the ECB Governing Council.

A few important questions arise from the evolution of ELA. The previously mentioned Fileleftheros headline about the local banking sector needing 10 billion euros is incompatible with the provision of ELA to the tune of 10 billion (between July 2012 and March 2013). If one takes the headline at face value, then government debt is unsustainable and if government debt is unsustainable then naturally the second biggest bank cannot be solvent. Given that the ECB had already offered an opinion since July 2012 that resolution might be preferable for Laiki, one wonders how ELA was allowed to reach 60% of GDP.

By March 2013 ELA became part of the problem, as analyzed by Fiona Mullen<sup>52</sup> and Xiouros (2013). Table 4 illustrates the gradual reduction in bank deposits from the system between 2009 and the end of 2012. The drop in deposits in the system from other banks (MFIs) is particularly striking. Part of the rise in ELA can be explained by this rapid drop in deposits, and the biggest part of that was deposits held by other MFIs with their Cypriot counterparts. While the

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<sup>51</sup> <http://www.ecb.europa.eu/pub/pdf/other/elaprocedures.en.pdf?327e7fc3fb2e543f45b57cb01ad421e8>

<sup>52</sup> <http://www.financialmirror.com/blog-details.php?nid=1094>



Cypriot political system was occupied with the business of politics, the business of deposit outflows was thriving.

This is especially alarming given the final solution offered to recapitalize the Cypriot banking sector. Essentially, it was deposits that were left behind that went through a hair-cut (an equity conversion, to be exact). This poses three issues. By delaying reaching a deal, a substantial amount of deposits, depending on when one counts, was allowed to leave the banking system meaning that the haircut was higher for the deposits that stayed behind. Secondly, around 15 billion of deposits existed in the Cypriot branches in Greece<sup>53</sup> and in the interest of “ring-fencing” they were not touched. This further increased the haircut on the depositors inside the Cypriot banking system. Third, someone had to shoulder the accumulated ELA (at around 10 billion euros this meant 60% of GDP) and this became a major issue during the final countdown<sup>54</sup>. Figure 19, taken from Fergus Murray<sup>55</sup>, illustrates the inconsistencies that the Cyprus banking bailout-bailin entailed, since banking system components were treated completely differently from each other.

#### **4. Why Such a Harsh Bail-in?**

The final crunch time in March 2013 would result in the banking system remaining closed for 11 days, one of the longest periods in global economic history (and this excludes two public holidays that were essentially working

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<sup>53</sup> See Zachariadis (2013) for further analysis on this topic and ELA:

<http://www.irishconomy.ie/index.php/2013/04/23/guest-post-from-mario-zachariadis-fairness-and-sustainability-for-cyprus/>.

<sup>54</sup> On April 4<sup>th</sup> 2013, ECB Governor Mario Draghi was asked whether non-elected central bankers had the mandate to push democratically elected governments to make decisions the politicians did not want to take. Draghi then clarifies the ECB position on ELA in the following way: “...ELA is the responsibility of the national central bank and not of the ECB. It can be extended only to solvent and viable banks. Now, it so happened that in the absence of a programme, these banks would not have been solvent and viable. At that point in time the Governing Council assessed there was no programme in place, and that’s why it had to do what it did. On all other occasions there was a programme in place. That’s why when people ask us why we didn’t do this on other occasions, the difference is that there was a programme in place, which led the Governing Council to assess that banks were solvent and viable. I don’t think that the view that we are acting politically is actually correct. We have a mandate, which has been given to us by the legislators, and we are acting within that mandate.” <http://www.ecb.europa.eu/press/pressconf/2013/html/is130404.en.html>. The ECB re-iterated on January 10<sup>th</sup> 2014 the responsibility of the national central bank on ELA provision in response to specific questions from the European Parliament: [http://www.ecb.europa.eu/pub/pdf/other/140110\\_ecb\\_response\\_troika\\_questionnaireen.pdf](http://www.ecb.europa.eu/pub/pdf/other/140110_ecb_response_troika_questionnaireen.pdf).

<sup>55</sup> <http://www.fergusmurraysculpture.com/2013/04/25/not-so-lucky-laiki-in-depth-analysis/>

days for politicians, the central bank, the ministry of finance and the media). On the morning of Saturday March 23<sup>rd</sup> 2013, the early morning news was that an agreement had been reached that involved a ten billion euro package to cover (until 2016) expiring government debt commitments, budget deficits and partial recapitalization needs for the Co-ops and Hellenic Bank. Moreover, the remaining 5.8 billion euros would come about from a horizontal, across-all-banks, haircut for around 6.75% for deposits up to 100,000 euros (covered by deposit insurance) and 9.9% for the uninsured deposits.

Touching deposit insurance was a dramatic mistake, since it immediately threatened to undermine the stability of banks elsewhere in the Euro Area, or the world for that matter. Moreover, most estimates of the total amount of deposits in the system indicated that a tax of around 13% on uninsured deposits would have been sufficient to raise the required 5.8 billion euros. Why was this error committed? The main argument was “fair burden sharing” across all participants in the Cypriot business model, and there is some element of truth in that, even though accepting the higher tax on the uninsured depositors would have been, with the benefit of hindsight, the best possible outcome for the economy and the banking system, given the situation.

Nevertheless, the deal still required approval from the Cypriot parliament. What happened after that Saturday is very strange to describe. Monday was a national holiday and also coincided with the large carnival in the second biggest town, Limassol. Immediately, politicians and concerned citizens started appearing on TV and radio stations, blasting the decision about the haircut in general and the insured deposits haircut in particular. Despite the best intentions of the government, by the time the mission returned from Brussels the next day, public opinion had already been convinced that this was unacceptable and that a better solution was possible given the “mistake” to touch insured deposits, that by now was generating international condemnation. On Tuesday, the Cyprus parliament voted down almost unanimously the proposed deal (the members of the governing party simply abstained) and, with the banking sector closed, frantic preparations were done to “improve the offered deal”. The minister of finance, Michalis Sarris, was sent to Russia in the hope that recapitalization could take place with Russian

funds (with some option-like elements from future proceeds of offshore Cypriot natural gas). Locally, there was discussion of using pension funds and Church assets to help with recapitalization, basically to find alternative ways to find the required 5.8 billion recapitalization levy. In the meantime, a Resolution law was approved in parliament and early next weekend, a special Eurogroup meeting was convened in Brussels.

By this time, the IMF, ECB and EC were all understandably incensed with the international outcry with haircutting insured deposits. Moreover, international banks were probably rightly asking (and probably lobbying) why their clients should contribute to the Cypriot “burden”, since it was the two major Cypriot banks that had the recapitalization problem. The final agreement kept deposit insurance intact, Laiki was resolved immediately with full contribution from equity shareholders, bond holders and uninsured depositors based on the Bank Resolution Law, rushed through the Cypriot Parliament on March 22<sup>nd</sup> 2013. The good part of Laiki was folded into the BoC, with the 9 Billion euros of ELA with it (essentially giving preferential treatment to ELA creditors, see Jack and Cassels (2013) for further discussion). Uninsured deposits in BoC would remain frozen until recapitalization has been effected through deposit/equity conversion of uninsured deposits. The program money (up to 10bn euros) will not be used to recapitalize Laiki or BoC. Moreover, to “protect the stability of both the Greek and Cypriot banking systems” the Greek branches of Cypriot banks should be sold as soon as possible<sup>56</sup>.

By all means this was a harsh deal, especially relative to the deal achieved the earlier week. Two SIFIs were immediately combined in one, but with no clear view on how the new bank could deal with the new challenges. Immediately, a decision had to be taken by local authorities on whether capital controls should be introduced or not. Initially, the CBC did not support the introduction of capital controls, but these were introduced after strong advice from the Troika (which seemed not to be unanimous on the issue). To the extent that large amounts of ELA could be extended, capital controls were not necessary. However, given what had just happened, it was not clear that the new BoC could sustain a rapid drop in deposits given the amount of collateral that

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<sup>56</sup> [http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ecofin/136487.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/136487.pdf)

would remain free after the pledged collateral for the 11bn euros ELA already in its balance sheet.

An interesting legal and policy question should be discussed at this point. Deposit insurance is a guarantee by the state. But if the state is bankrupt and is forced to take actions because it cannot abide by the guarantee, should the uninsured depositors be less senior to insured depositors? Or should a principle of proportionality (that all depositors be treated as equally senior creditors) be applied? This is an interesting legal question that has important applied implications in how crises should be handled, and is discussed further in Jack and Cassels (2013, p. 4).

By all accounts, this was a harsh deal and the natural question arises, why was the final deal so harsh? One can argue that Cyprus suffered from “rescue fatigue” being fourth in line to receive support after Greece, Ireland and Portugal (and one could add Spain in this group). One can also argue that Cyprus was too small to propagate contagion and did serve well the purpose of “ring-fencing” Greece and the Troika effort in a larger market that was more likely to generate contagion. One can also argue that Cyprus, prior to the German elections, could prove a convenient example for larger countries (like Greece, Spain or Italy) to take the necessary measures not to find themselves in a similar situation. Moreover, the perception of money-laundering<sup>57</sup> and the idea of bailing out rich foreigners who might be engaged in money-laundering or even legitimate tax avoidance did not generate any sympathy for Cyprus. And for sure, the procrastination exhibited by the Cypriot government seriously exasperated international lenders.<sup>58</sup>

Money laundering plays an especially important role here. Given the international interest in Cyprus, questions were increasingly asked about the source of large deposits in the country. Money-laundering concerns were reflected in the Eurogroup decision to appoint Deloitte Italy to assess the effectiveness of customer care diligence measures in the Cypriot banking sector. The eventual report, dated April 24, 2013, was published in the end of

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<sup>57</sup> <http://online.wsj.com/news/articles/SB10001424127887323452204578292541738312974>

<sup>58</sup> See Clerides (2013) for further discussion.

June 2013 at the website of the Ministry of Finance,<sup>59</sup> but a shorter version of it, with much harsher interpretations of the findings, appeared in the international press<sup>60</sup> on May 17<sup>th</sup> 2013, forcing a reaction from the CBC pointing out a number of findings subject to different interpretations when compared with practices in other EU countries.<sup>61</sup> The international perception is that a problem exists, and this was an additional lever against the Cypriot positions in March 2013.<sup>62</sup>

## 5. Lessons from the Cyprus Crisis

There are some standard but also some non-standard lessons from the development and final “resolution” of the Cypriot crisis. In this section I will collect the general conclusions of what can be learned from the crisis for other episodes in the future. The main motivation is to address the question of whether there are useful lessons for preventing a crisis from developing but then also managing a crisis once it breaks out.

### 5.1 Do Bail-ins Work?

An editorial by *The Economist* one year after the Cyprus bail-in concludes that “the bail-out is working; the bail-in isn’t.”<sup>63</sup> I disagree with that view, mostly because the events in March 2013 did not involve just a bail-in. They involved a fire-sale of the Greek branches of the Cypriot banks, they involved the unexpected proposal of taxing insured deposits and the implied loss of trust in the banking system that necessitated capital controls, a large fiscal contraction that had to be implemented simultaneously with the resolution of the second major SIFI (Laiki) and the transfer of a substantial liability in the form of ELA to the largest bank (BoC). My view, which can neither be corroborated nor falsified, is that the horizontal haircut proposed in the first Eurogroup could

<sup>59</sup> [http://www.mof.gov.cy/mof/mof.nsf/All/65C2084684041234C2257B8D003D42F7/\\$file/Special%20Assessment%20Cyprus.pdf](http://www.mof.gov.cy/mof/mof.nsf/All/65C2084684041234C2257B8D003D42F7/$file/Special%20Assessment%20Cyprus.pdf).

<sup>60</sup> <http://blogs.wsj.com/moneybeat/2013/05/17/report-finds-shortcomings-in-cypriot-money-laundering-controls/>

<sup>61</sup> [http://www.stockwatch.com.cy/nqcontent.cfm?a\\_name=news\\_view&ann\\_id=176355http://online.wsj.com/news/articles/SB10001424127887323452204578292541738312974](http://www.stockwatch.com.cy/nqcontent.cfm?a_name=news_view&ann_id=176355http://online.wsj.com/news/articles/SB10001424127887323452204578292541738312974)

<sup>62</sup> A recent typical example referring to London, Vienna, Monaco, Latvia and Cyprus as “money launderers for Ukrainian and Russian capital” is a March 11, 2014 *Financial Times* opinion piece by Taras Kuzio (<http://blogs.ft.com/iclibezp1.cc.ic.ac.uk/beyond-brics/2014/03/11/guest-post-the-wests-double-standards-towards-ukraine/#axzz2vkHhBOW0>).

<sup>63</sup> <http://www.economist.com/news/finance-and-economics/21598649-bail-out-working-bail-isnt-injured-island>

have been successful, since it could have been implemented without capital controls, without the fire sale of the Greek branches and the resolution of the second biggest bank. Further empirical evidence will therefore be needed to determine whether bail-ins can be successful or not.

## **5.2 Macroeconomic Stability**

Standard macroeconomic stability advice (keep debt and deficit under control, pay attention to external imbalances, beware of large capital flows) especially in a currency union continues to apply. A common argument while the crisis was brewing (2010-2012) was that the low level of debt and deficit (60% and 5% respectively) meant that the country could not go bankrupt. What matters though is not just the level of debt but the speed with which the debt is growing. A useful rule of thumb might be that a rapid swing from surplus to deficit, with the deficit being at around 5% for four years, financing non-productive expenditures, with no sign of any corrective action being taken, should be a cause for alarm for policy makers in a currency union.

Large capital flows are also a cause for concern. Cyprus in 2010 was actually perceived as a safe haven and many depositors from Greece actually transferred money to Cyprus. Monetary policy based on inflation targeting or new Keynesian models might be unable to offer a prescription on how capital flows should be handled, especially in a currency union. Requiring the banking sector to observe liquidity ratios on deposits can be an effective macro-prudential tool that can prevent rapid credit growth in an economy, especially in the presence of volatile foreign deposit flows (see Table 4).

## **5.3 Cost of Delay**

The cost of political inaction to resolve a developing crisis can be substantial. It seems that in Cyprus, even though beyond a certain point Laiki required urgent recapitalisation, the CBC based the solvency of Laiki conditional on an agreement with the Troika.<sup>64</sup> During this period, the government preferred to wait for nine more months and let the next government sign the agreement after the February 2013 elections.

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<sup>64</sup> This is what executive director of the ECB Jorg Asmussen stated at the European Parliament, and this is what both the Governor and the Vice Governor of the CBC testified in August 2013.

The cost of delay is not only in terms of a weakening economy. Leakages about future policy can affect the cost of the eventual chosen solution. There were many instances of the “bail-in” being discussed internationally in the last three months before it actually occurred, implying that many deposits (usually from more sophisticated depositors) fled the banking system. Michaelides et. al. (2013) emphasize the destabilizing consequences leakage can have before official sovereign debt downgrade announcements. The original motivation in that study comes from Cyprus, where the stock market fell around 30% in the ten days before Fitch downgraded Cyprus sovereign debt by two notches in August 2011. The paper finds evidence consistent with leakage of information and similar leakage can take place during negotiations to agree a bail-out agreement. Given the fragility of the banking sector, speed is of the essence in staving off more catastrophic outcomes, or even generating self-fulfilling prophecies.

#### **5.4 Monetary and Fiscal Policy Interaction**

When banking sectors interact with sovereign debt, issues of central bank independence and transparency arise. Central bank independence was developed to keep politicians from setting interest rates and/or engage in monetary financing of budget deficits. But when tax-payer money is involved, as when resolution mechanisms are being discussed, the central bank needs to be a lot more accountable and provide more information on where policy is moving. When faced with a crisis that unavoidably will involve a supervisory and a resolution authority, in a crisis period, it is unavoidable that there will be daily interaction between the central bank and the fiscal authority. During this daily interaction, cases of conflict might arise and one of the two authorities might need to take the lead. Does central bank independence imply that the central bank will always be in the lead or should the preferences of the tax payer take pole position? How are conflicts of this nature to be resolved, both ex ante but also during a developing financial crisis? It is probably better to make sure a culture of “co-operation” between the two authorities is established, which does not mean the independence of one or the other is automatically compromised.

Another major issue involves the relationship between an independent central bank and the fiscal authority when the central banker does not seem to share

the political orientation of the governing party. When the economic situation is worsening, a short-sighted government may have the perverse incentive to exaggerate a banking crisis, to put squarely the blame on the central bank. The central bank can only guard against this by being completely transparent and offer as much information as possible to the public about its actions (or lack thereof).

### **5.5 When Does Private Debt Become Dangerous?**

What level of private debt to GDP is “dangerous” for financial stability in a country? When land restrictions are tight, either due to stringent planning permission laws or simply the lack of space, tangible assets to GDP tend to have high values. Kiyotaki, Michaelides and Nikolov (2011) make that point in a calibrated general equilibrium model, that also makes the point that interest rate falls lead to higher house price changes in countries with tighter land constraints. We expect Japan and the UK to have a higher ratio of tangible asset value to GDP, and we expect housing prices to be higher in coastal cities relative to cities where land is plentiful (for example, Glaeser, Gyourko and Saks (2005)). Along with high values come also high debts. Given this natural variation in debt levels across countries, at which point does private debt to GDP become dangerous for financial stability? In the Kiyotaki et. al. (2011) model, it is the difference between real interest rates and real growth that generates the volatility and strong house price trend (primarily by affecting the value of undepreciable land, that is a fixed factor of production). In such an environment, therefore, it becomes critical that growth rates be maintained as there is nothing asymmetric in how fundamentals affect housing prices. Housing values can fall with the same speed as they have risen, if the growth rate falls and approaches the real interest rate.

### **5.6 Cross-Border Banking Supervision and Banking Union**

Corporate governance issues become important but so does the complexity of supervising banks operating across different borders. In the EU responsibility for banking supervision resides with the central bank where the banks have their head office (home country control). But it is the host country that has responsibility in its own market (host country responsibility). Given the observation that organizations tend to guard information jealously, or not be



very keen in co-operating, this makes supervision difficult (de Grauwe (2012), chapter 8). Perhaps the move towards banking union will mitigate these problems. Nevertheless, information sharing in fast-moving markets, across regulatory bodies not necessarily speaking the same language, is a challenge that will need to be faced even within a Euro Area banking union. Leaving smaller banks without any supervision from the ECB can also prove costly, as was the experience from the smaller co-ops (and as emphasized by Garicano (2012)) for the Spanish cajas).

Managing unprecedented levels of liquid balances is also a problem, and this applies to both MFIs and non-MFIs. Even though a self-respecting financial institution might never refuse to take on additional deposits, the case might be made for an upper amount of deposits allowed to be acquired in any given period as a risk management measure. Barring that, varying regulatory liquidity ratios might be an effective tool in constraining destabilizing credit growth.

Moreover, the methodological details in stress tests need to be intensely analysed and should be as uniform as possible when involving banks operating in different jurisdictions. A related question is the extent of transparency in central banking affairs when financial stability is at stake and when the taxpayer is either not willing or able to recapitalize the banking system. Should a central bank then risk possible bank runs by making this information public? Should a central bank, in the interest of full transparency (say to avoid having zombie banks), insist on a conservative stress test?

### **5.7 Is the size of the banking sector dangerous to financial stability?**

A lot has been said about the size of the Cypriot banking sector and how that was providing high returns but the risks were not been properly taken into account (for instance, ICFCBS, 2013). Nevertheless, it is not the size of the balance sheet of any banking system that should be of first order importance. Instead, it is the asset composition of this system's balance sheet. Had the Cypriot banking system loaded up on German government bonds, the losses from this very large banking system would have been avoided. Focussing the debate on the size of balance sheets does not seem, therefore, to be the correct focus when wanting to promote financial stability.

### **5.8 Presidential versus Parliamentary democracy**

The type of political system in a country can also be an important aspect that international lenders need to take into account when negotiating with local policy makers. If Cyprus were a parliamentary democracy, then the prime minister could have passed more easily the first Eurogroup decision (subject to agreeing to respect deposit insurance but having a slightly higher horizontal tax on deposits). Incidentally, all the countries in Figure 1 that agreed a bailout within three weeks are parliamentary democracies, with Cyprus being the exception. It should be noted, though, that this is not meant as a justification of the delay since the opposition was more keen to sign an agreement a lot earlier.

### **5.9 Financial Consumer Protection**

Vallee (2013) makes the empirical point that co-cos helped European financial institutions deal better with financial distress during the European sovereign debt crisis. Nevertheless, in Cyprus they helped generate an even stronger distrust to the banking system and the CBC (even though the CBC is not responsible for financial consumer protection). The problems Cypriot banks faced from this backlash are not an isolated incident. Similar problems arose in Spain<sup>65</sup> and raise a number of concerns for financial consumer protection agencies. Who should be the regulator when these products are offered to the public by banks that are supervised by the central bank? Should the central bank be the supervisor of a banking system that relies on these products and at the same time be the institution that approves their sale to the public? Is there a conflict of interest between monetary policy (setting interest rates), financial stability and financial consumer protection? What does this conflict imply about the optimal structure of institutions entrusted with these responsibilities?

### **5.10 Tax Havens and Fiscal Union**

It is hard to imagine a world with uniform taxation systems across all countries and therefore companies and individuals will always try to take advantage of differences across tax jurisdictions to move capital around. How can then a regulator tell the difference between funds moving around due to a low corporate tax rate rather than lax money laundering standards? Should the

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<sup>65</sup> [http://www.nytimes.com/2013/07/09/world/europe/spaniards-fight-to-get-savings-back.html?\\_r=1&](http://www.nytimes.com/2013/07/09/world/europe/spaniards-fight-to-get-savings-back.html?_r=1&).

central bank be responsible for enforcing money laundering laws or should that responsibility lie with another independent authority (the SEC)? Given the global nature of these transactions, should this enforcement be given to an independent global enforcer (a branch of the IMF, for example)?

### **5.11 Conduct of Stress Tests**

A common recipe during the European sovereign debt crisis, that was carbon-copied in Cyprus, was to invite expert independent consulting firms to perform the stress tests: OW in Spain, Blackrock in Greece and Ireland and PIMCO in Cyprus. Each of these reputable firms develops proprietary models to compute capital needs, an inherently difficult job to begin with. Unavoidably, heterogeneous processes across firms generate different valuations across countries. In the modern interconnected world, with banks operating in different countries, the question arises whether these processes should be standardized to avoid regulatory arbitrage. A related question is whether a central bank should be relying on proprietary models of private sector consulting firms, that are at the same time, in the asset management business. One might be more comfortable, for instance, for a central bank somewhere in Europe to invite the central bank of another country to perform the calculations, or an international body like the IMF to take over these responsibilities. This will both ensure a consistent methodology across jurisdictions, but would also minimize the potential conflict of interest a private sector firm might face across its different business areas.

## **6 Conclusion**

My personal view is that Cyprus suffered from the overconfidence offered by around 35 years of almost continuous and robust growth (with the exception of a mild 1991 recession). Such overconfidence makes politicians interested in short-term political calculations underappreciate the magnitude of economic problems, that are made substantially worse as time goes idly by, and harsh choices eventually become unavoidable. An early resolution of the 18-month uncertainty would have generated a package that would not have been as harsh, even three to six months before March 2013. The main lesson for wider European integration is that problems need to be fixed early, to avoid what

Hemingway observed, namely that countries, like families, reach bankruptcy gradually, then suddenly.

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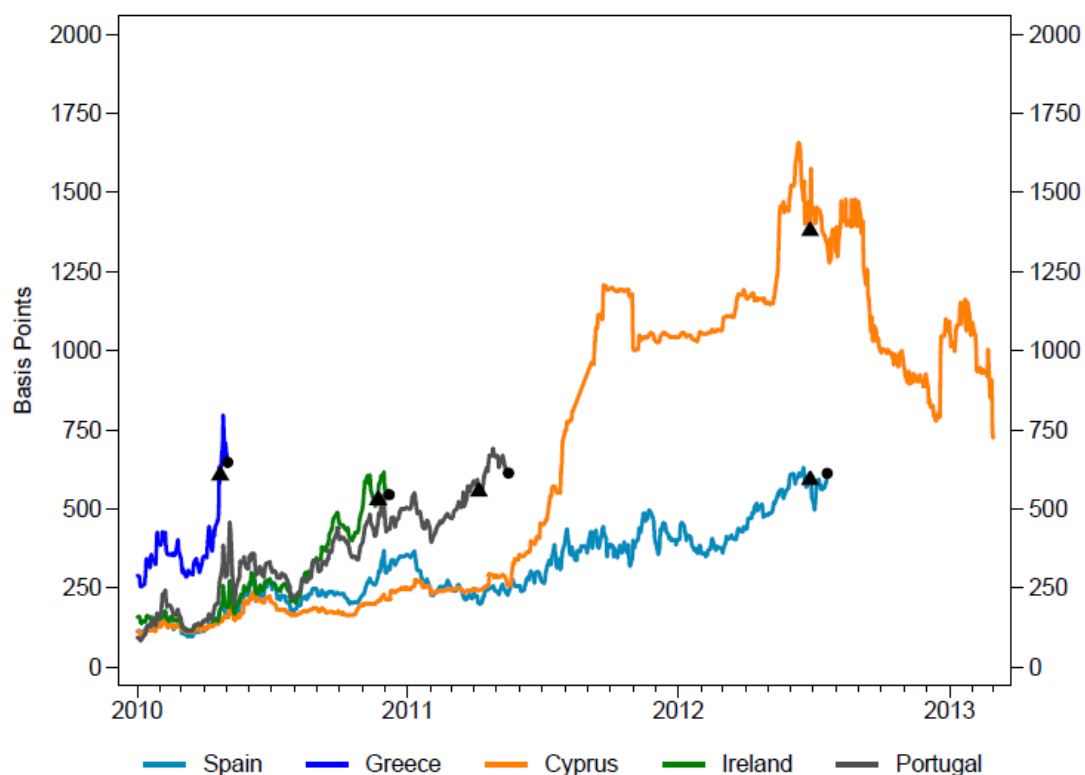
## **GLOSSARY**

|       |  |
|-------|--|
| A & M | Alvarez and Marshal                          |
| BoC   | Bank of Cyprus                               |
| CBC   | Central Bank of Cyprus                       |
| CGB   | Cyprus Government Bonds                      |
| CRA   | Credit Rating Agency                         |
| EBA   | European Banking Authority                   |
| ECB   | European Central Bank                        |
| EC    | European Commission                          |
| ELA   | Emergency Liquidity Assistance               |
| ESM   | European Stability Mechanism                 |
| EU    | European Union                               |
| GGBs  | Greek Government Bonds                       |
| HSBC  | Hongkong and Shanghai Banking Corporation    |
| HFSF  | Hellenic Financial Stability Fund            |
| IMF   | International Monetary Fund                  |
| MPB   | Marfin Popular Bank (Laiki)                  |
| NCB   | National Central Bank                        |
| OW    | Oliver Wyman                                 |
| PIMCO | Pacific Investment Management Company        |
| PSI   | Private Sector Initiative                    |
| SIFI  | Systemically Important Financial Institution |

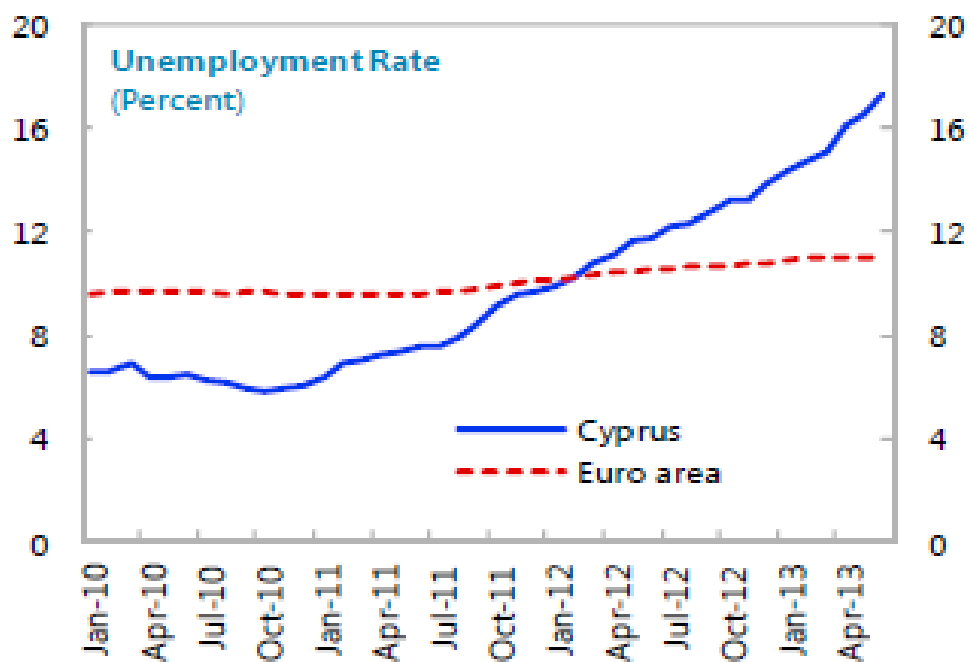
## **Chronology of the Crisis**

|                  |   |
|------------------|---|
| 01 May 2004      | Cyprus entry to EU  |
| 01 January 2008  | Cyprus entry in Euro-Area   |
| 11 July 2011     | Mari Explosion  |
| 21 July 2011     | Initial Greek PSI   |
| 24 August 2011   | 24 fiscal measures announced  |
| 26 October 2011  | Final PSI and 9% EBA requirement by June 30, 2012   |
| 14 March 2012    | Moody's downgrades CGB to non-investment grade ("Junk")   |
| 03 May 2012      | New Governor at CBC   |
| 13 June 2012     | Leak about possible bailout for Cyprus reaches newswires  |
| 25 June 2012     | Fitch downgrades CGBs to non-investment. CGBs cannot be used for repos with ECB. Cyprus asks Troika for bailout negotiations. |
| 28 June 2012     | Reuters: Eurozone officials put total Cyprus bailout at 10bn  |
| 1 July 2012      | Cyprus takes over 6-month rotating EU Presidency  |
| 4 July 2012      | Phileleftheros headline: "Banks need 10 bn euros."  |
| 30 Nov 2012      | Initial agreement between Cyprus government and Troika  |
| 17 February 2013 | First round of Presidential elections in Cyprus   |
| 24 February 2013 | Second round of Presidential elections  |
| 15 March 2013    | First Eurogroup decision to tax insured deposits horizontally   |
| 18 March 2013    | Cyprus Parliament does not approve deal: zero votes in favour out of possible 56.   |
| 22 March 2013    | Resolution Law approved by Cypriot parliament   |
| 25 March 2013    | Final agreement between Cyprus and Troika. No parliamentary approval needed on account of resolution law.                     |

**Figure 1: CDS spreads, date assistance sought (triangles) and date assistance agreed (circles)**

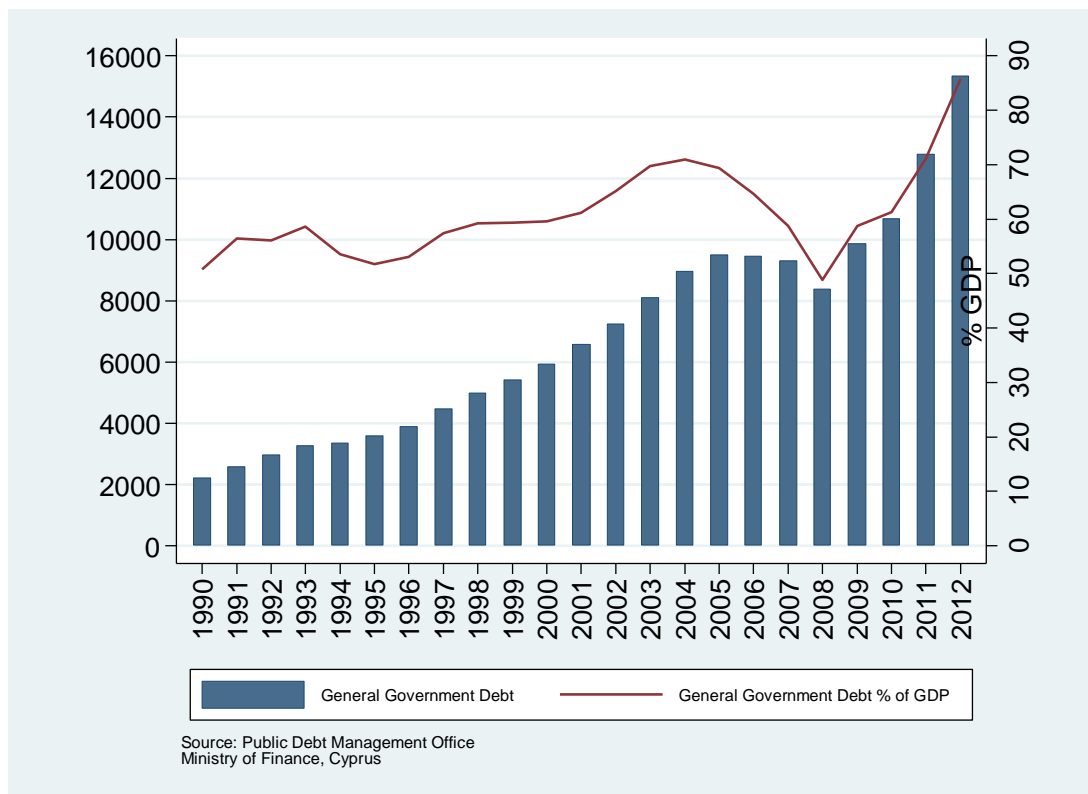


**Figure 2: Unemployment Rate in Cyprus relative to the Euro Area**

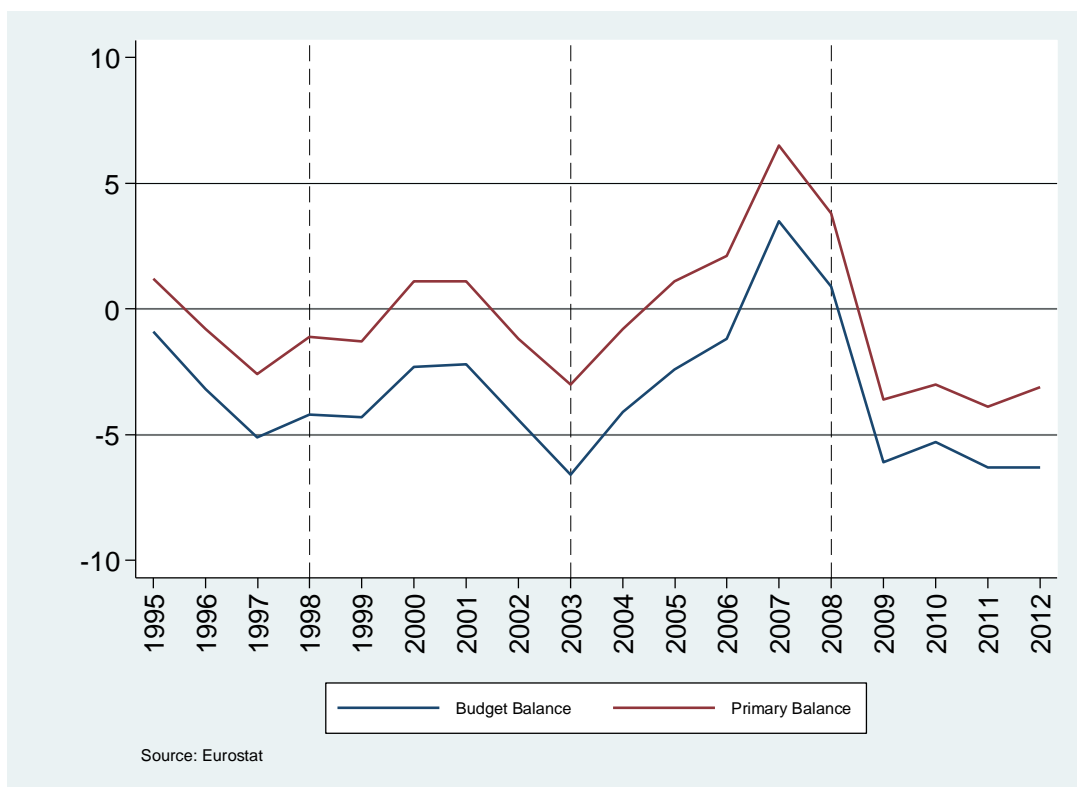


Source: IMF September 2013 Country Report for Cyprus

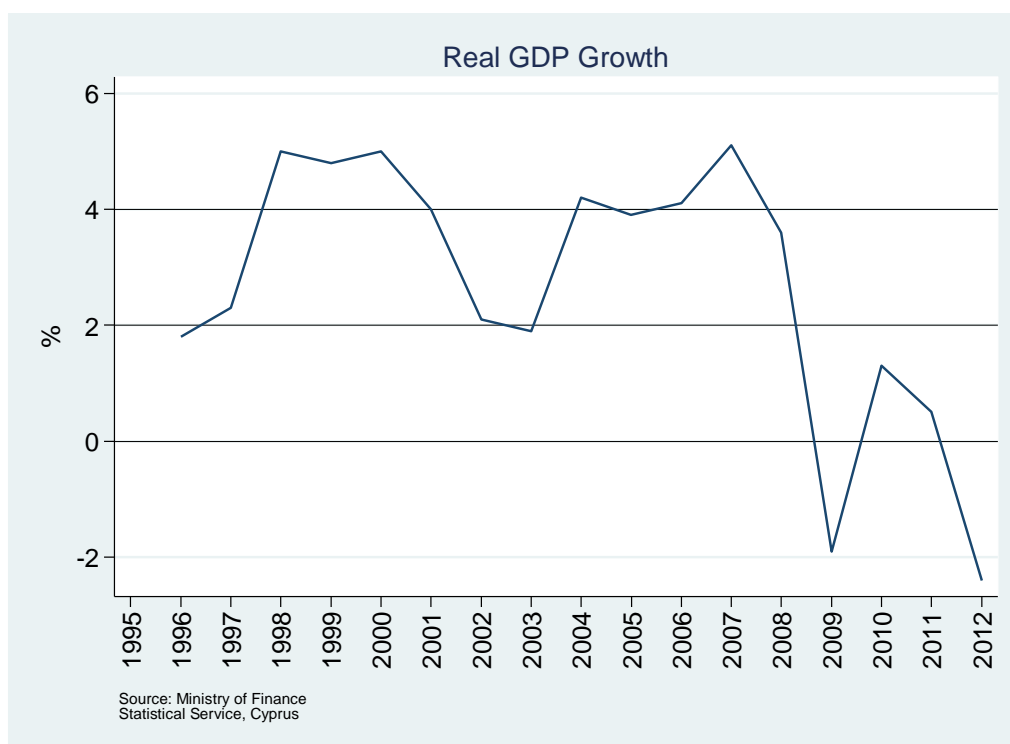
**Figure 3: Cyprus Government Debt to GDP**



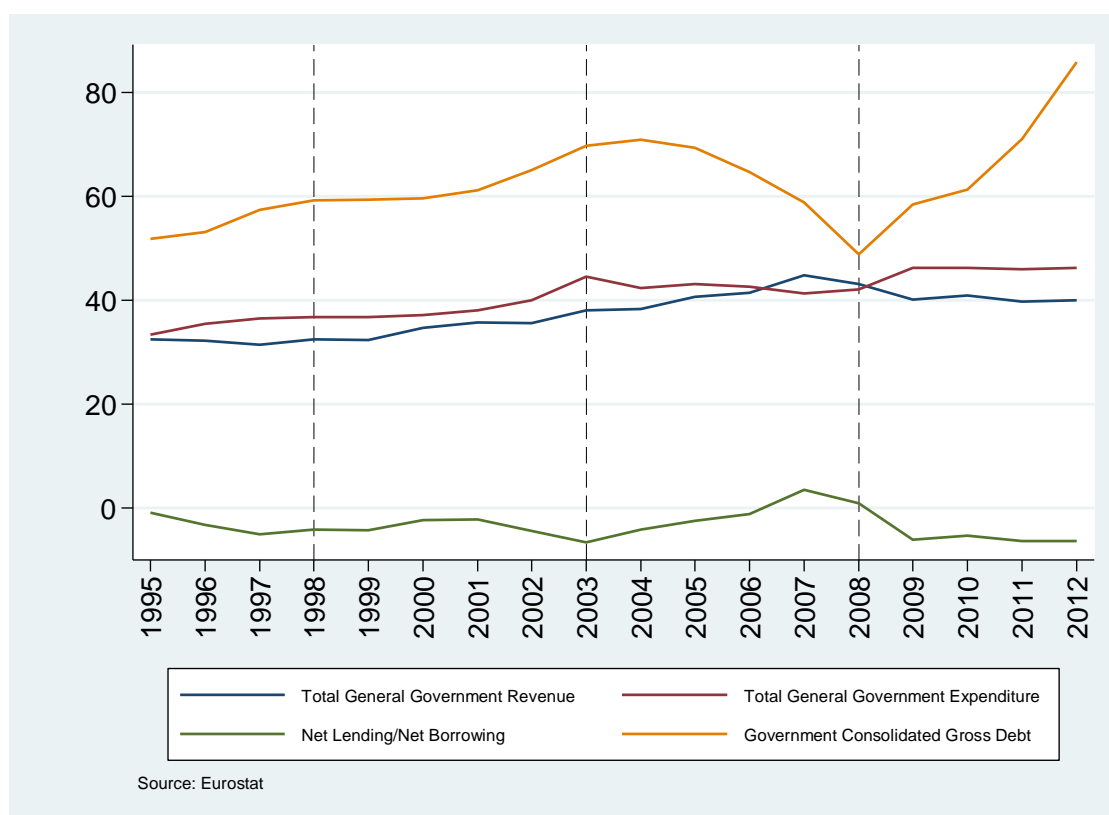
**Figure 4: Primary and Total Government Budget Balance to GDP**



**Figure 5: Real GDP Growth (year on year)**

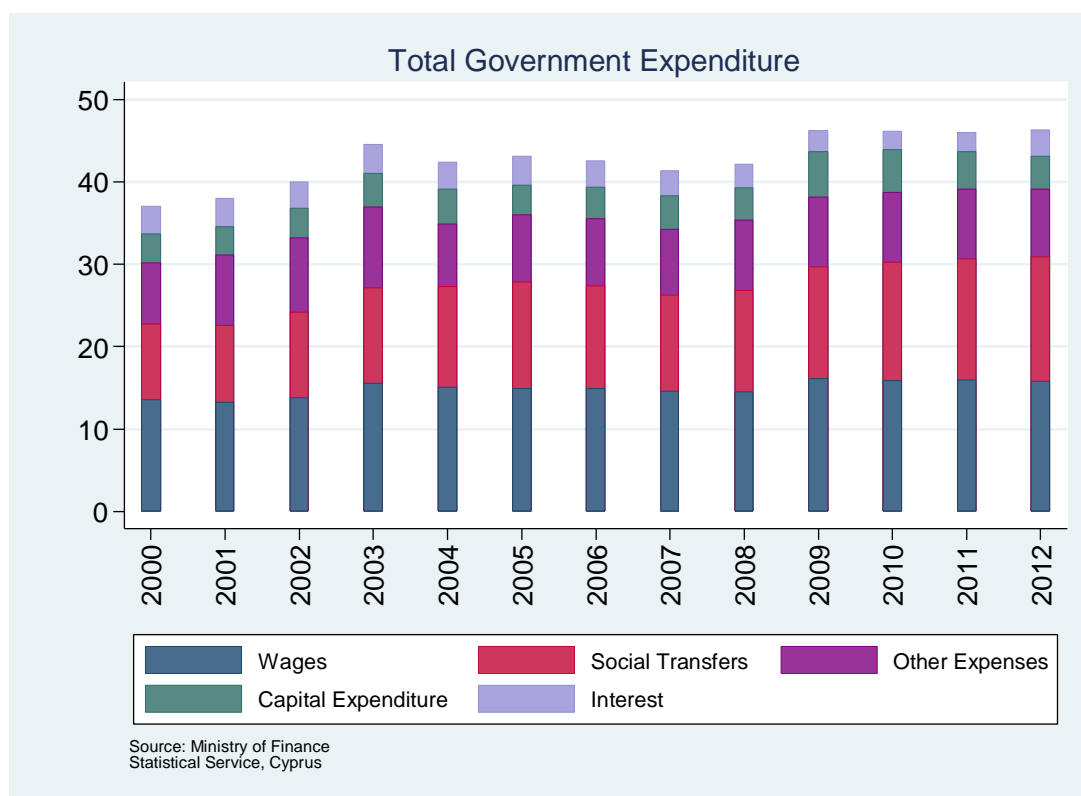


**Figure 6: Total Government Expenditures and Receipts (as % of GDP)**

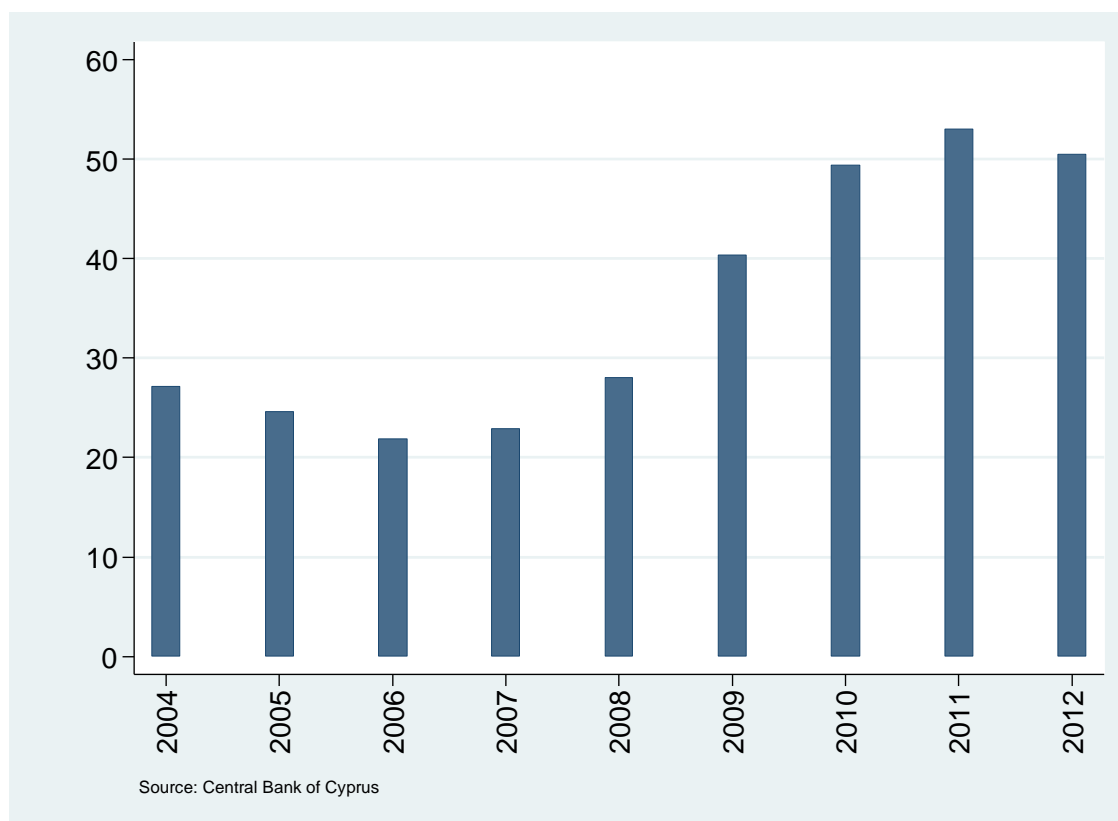


Note: Dotted lines are Presidential Election Years.

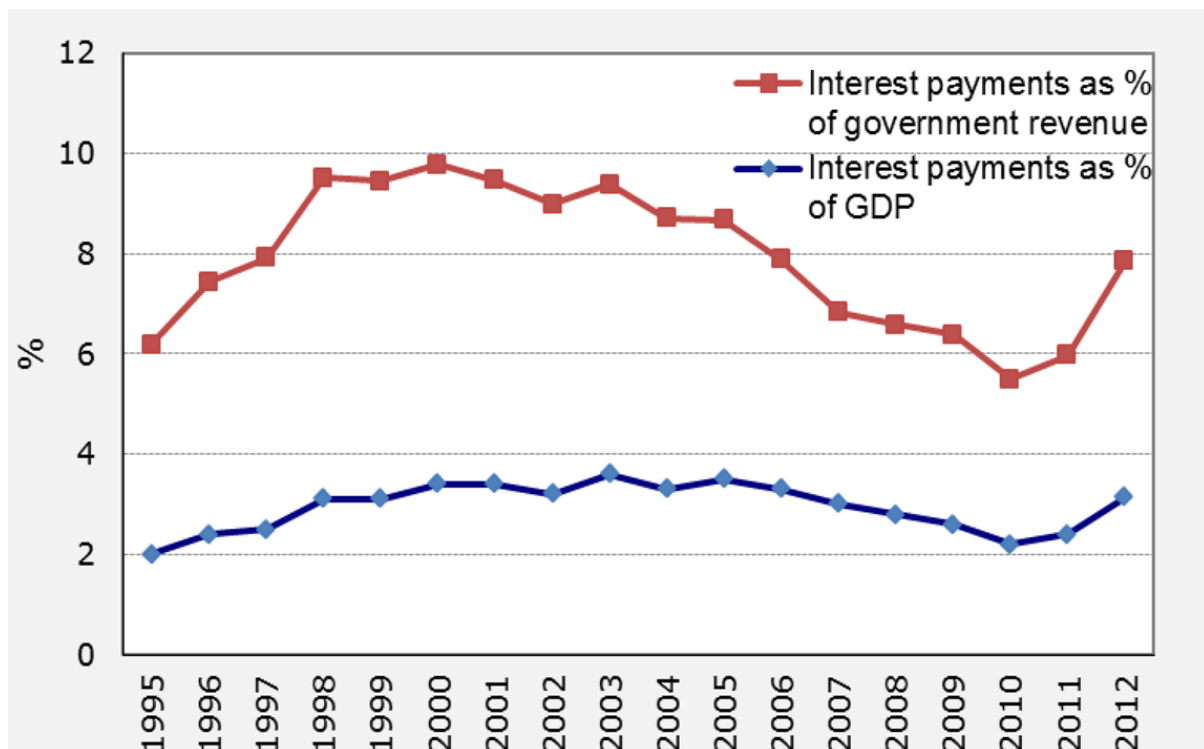
**Figure 7: Composition of Government Outlays (as % of GDP)**



**Figure 8: Share of Government Debt Held Internationally**

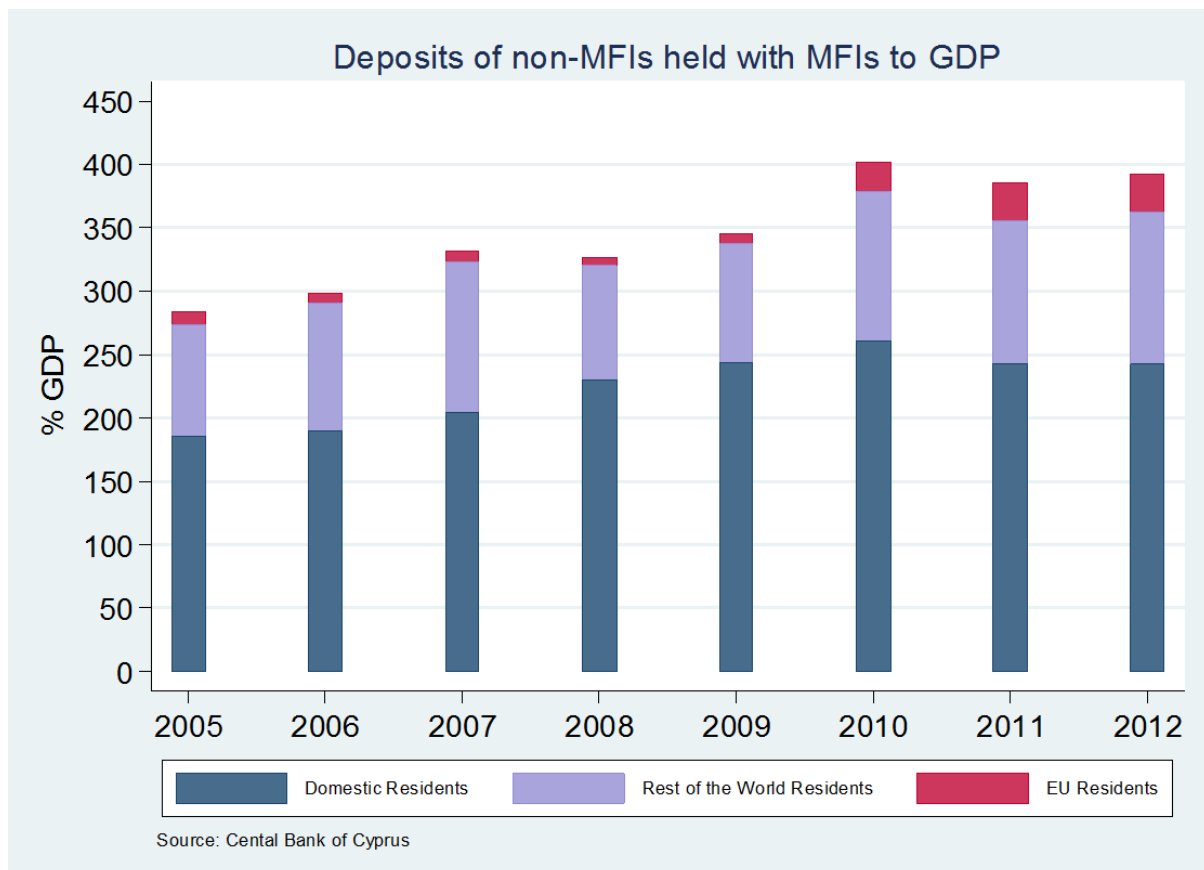


**Figure 9: Interest Payment on Government Debt**

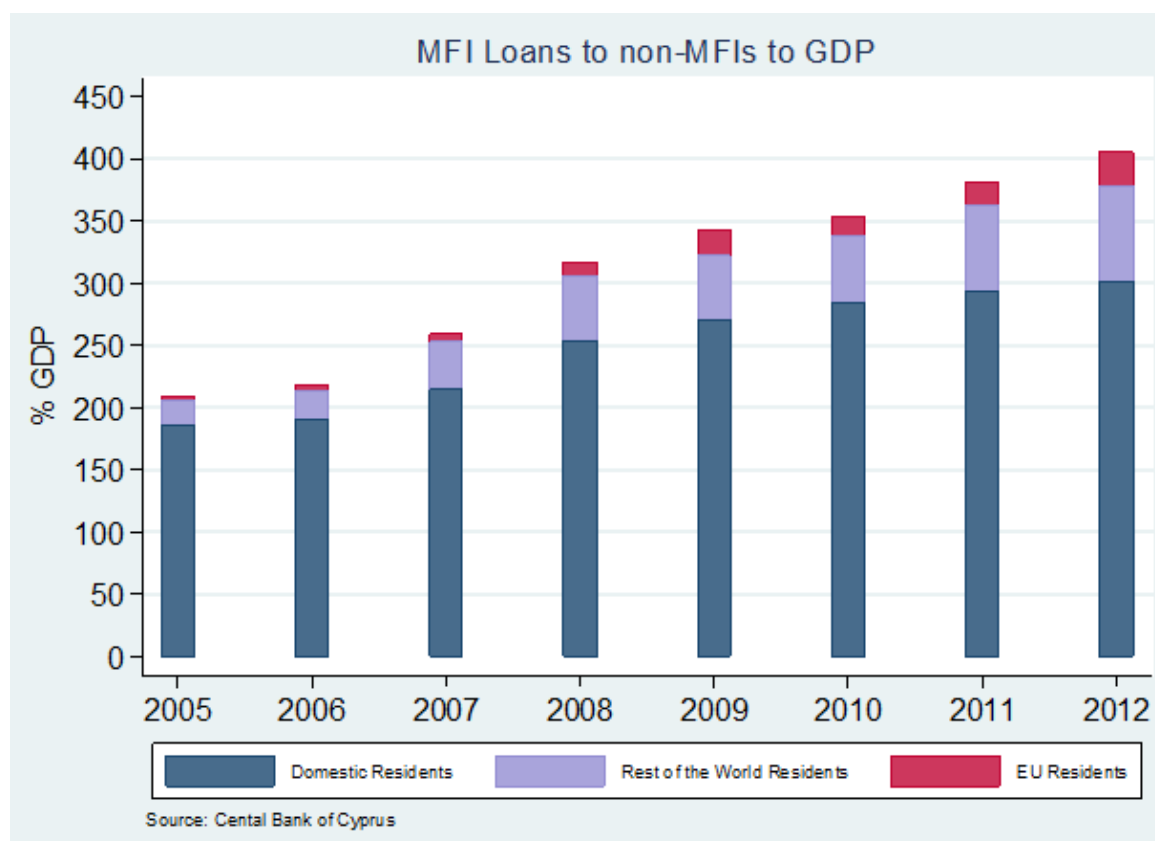


Source: Cyprus Government Debt Management Office.

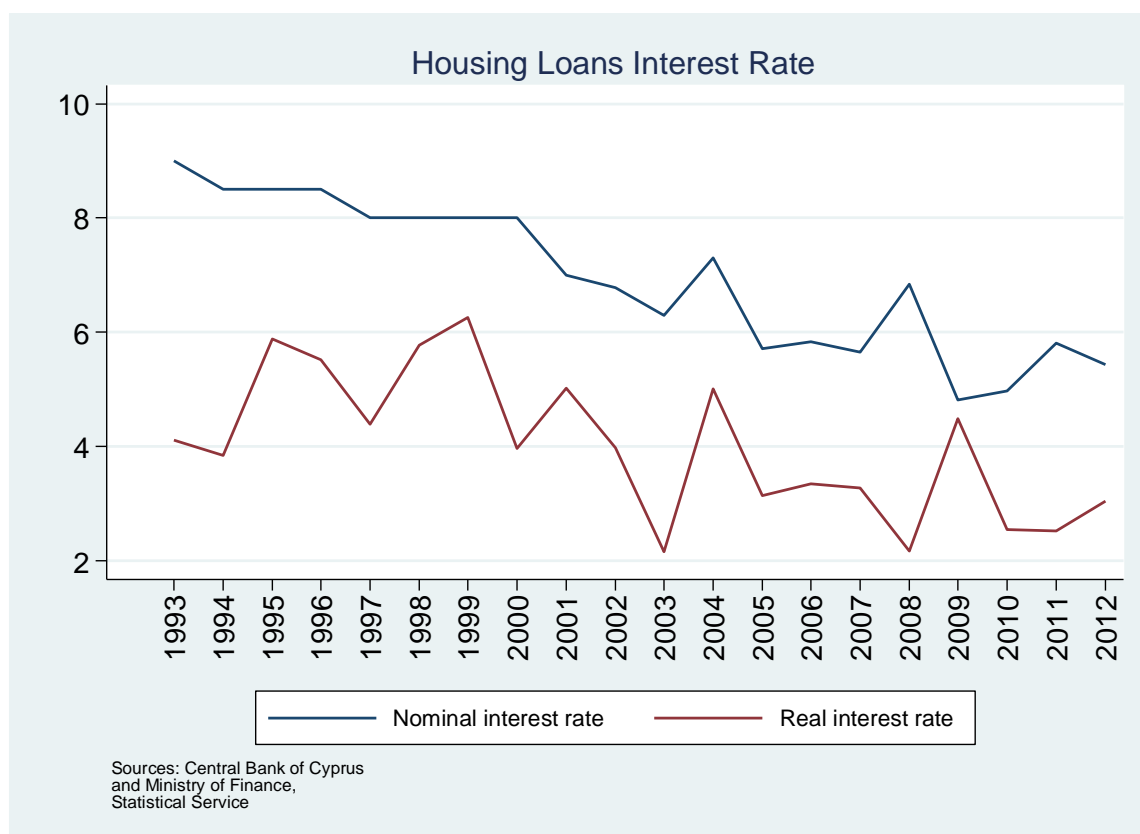
**Figure 10: Local Banking Deposits Relative to GDP**



**Figure 11: Banking System Loans Relative to GDP**

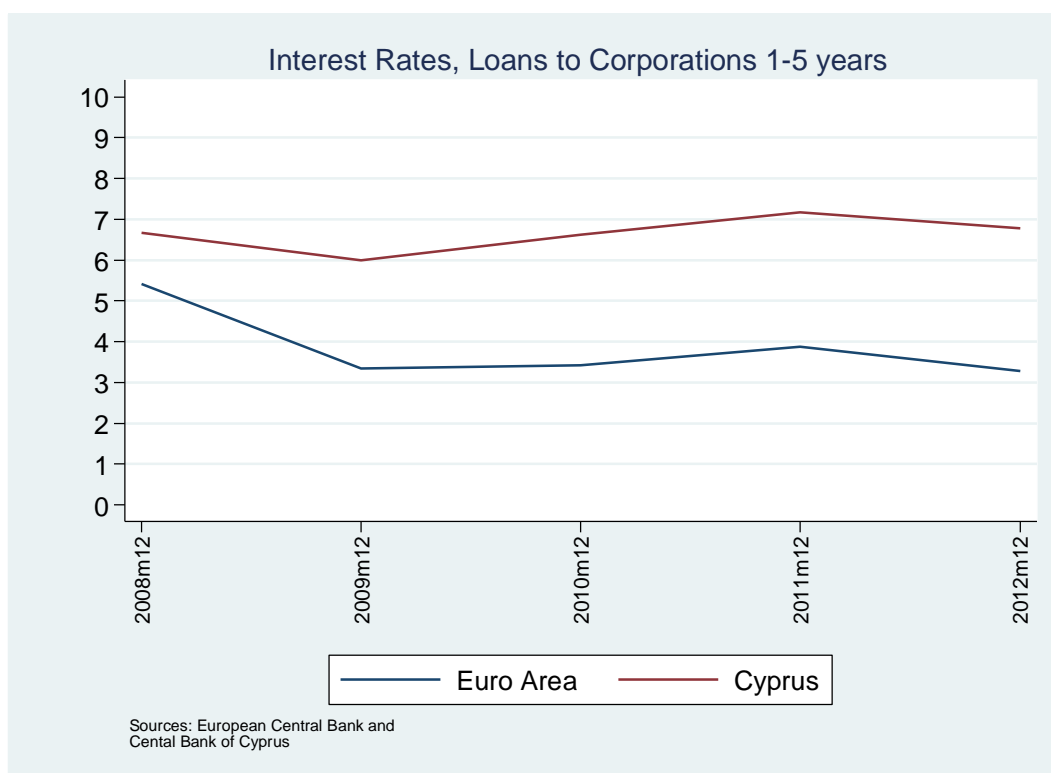


**Figure 12: Housing Loans Interest Rate**





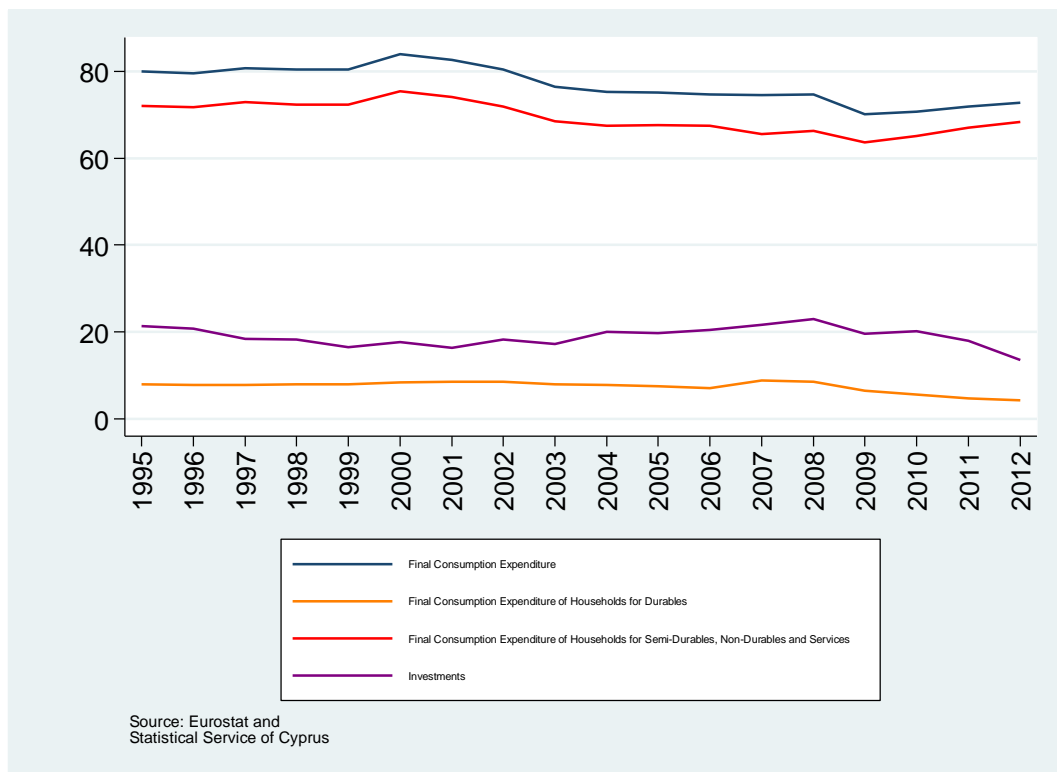
**Figure 13: Interest Rates on Corporate Loans**



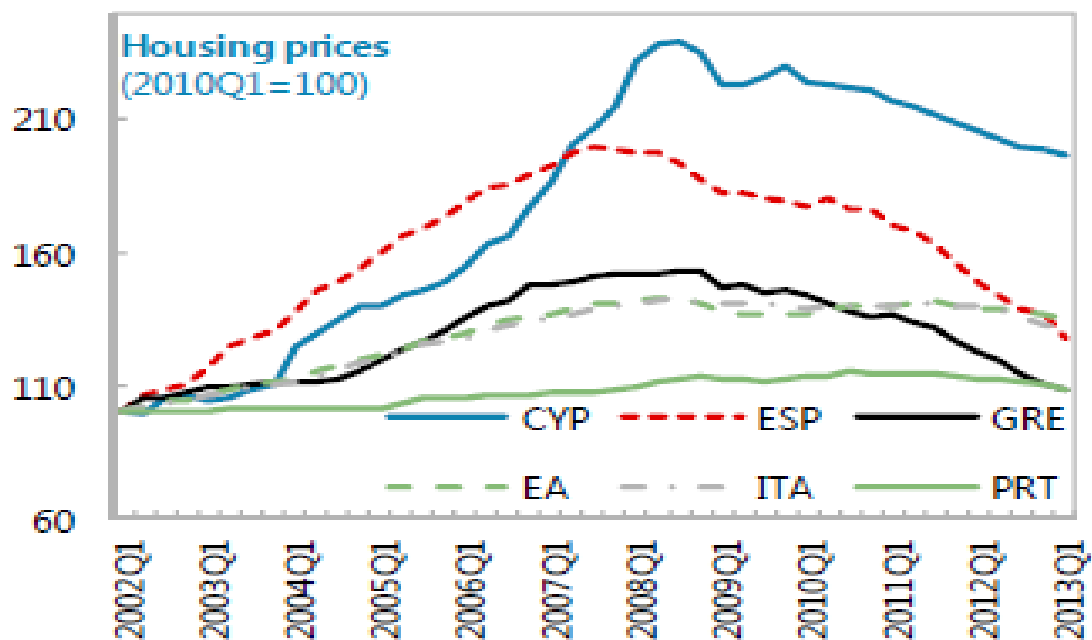
**Figure 14: Current Account Deficit (as a % of GDP)**



**Figure 15: Consumption and Investment to GDP**

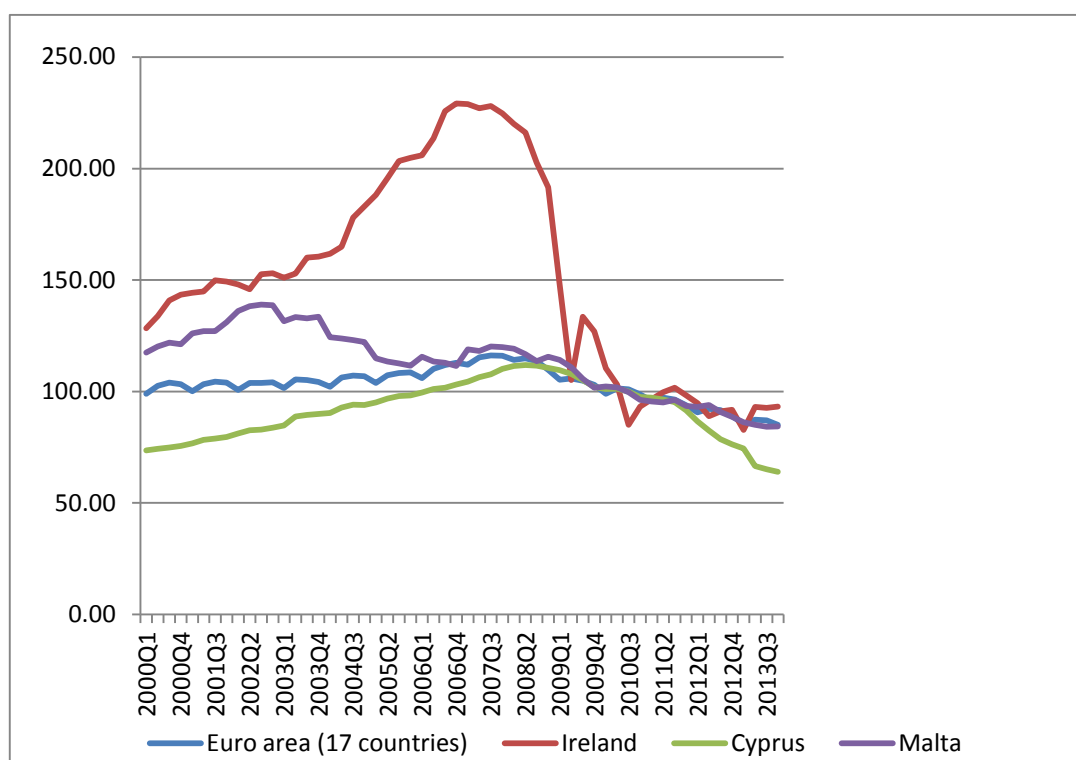


**Figure 16: Real Estate Housing Prices**



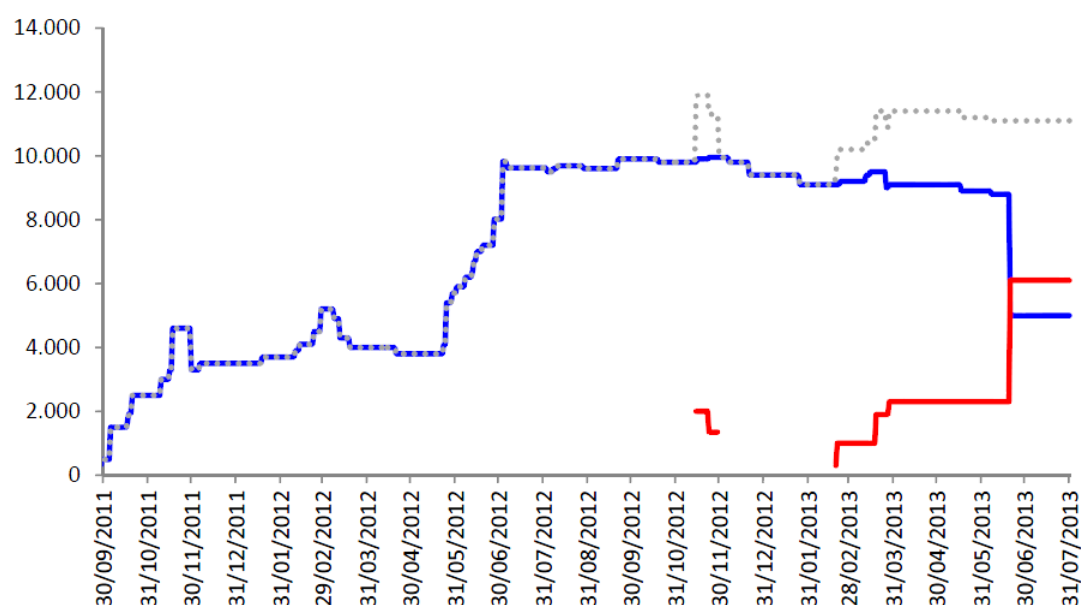
Source: IMF September 2013 Country Report for Cyprus.

**Figure 17: Labor Input Construction**



Notes to Figure 17: This is the labor input in construction index compiled by Eurostat, quarterly data (2010=100).

**Figure 18: Evolution of Emergency Liquidity Assistance in Cyprus**



Notes to Figure 18: This is the evolution of ELA in millions of euros for the two systemic banks (Laiki and Bank of Cyprus) from CBC data. The blue (dashed) line is the ELA given to Laiki, and the solid not fully connected line is the one given to BoC. It is clear that Laiki resorted to ELA earlier and reached in the summer of 2012 around 60% of GDP (around 10 billion euros). At that point, Laiki was recapitalized through the issue of a 1.8 billion euros bond by the Cypriot government.

**Figure 19: The Inconsistencies in the Cyprus Bailout**

| Representation of Cyprus Banking System Treatment |   |   |   |
|---|---|---|---|
| Business  | Greek Branches of Cypriot Banks (BoC, Laiki and Hellenic)   | Cypriot Operations of BoC and Laiki plus outstanding 10 bn euros ELA  | Cooperative Banks and Hellenic Bank (located in Cyprus)                                 |
| Business Treatment                                | Bailout with EFSF (purchase loan plus previous 4.7 bn euros recapitalization of Piraeus Bank and 1.5 bn euros from Greek state) | Bailin of uninsured depositors of BoC and complete bailin of uninsured depositors of Laiki (with no euro zone assistance) | Bailout (allocated a maximum of 2.5 bn euros ESM funds from 10 bn euros Cyprus bailout) |

Notes: This is taken from Fergus Murray, April 25<sup>th</sup>, 2013. In the summer of 2013, Hellenic Bank was eventually recapitalized without any public assistance and the co-op banks were recapitalized in March 2013 with a 1.5bn euros from the ESM.

**Table 1: Government expenditures by category (% of GDP)**

| <b>Year</b> | <b>G</b> | <b>W</b> | <b>ST</b> | <b>I</b> | <b>Other</b> | <b>CAP</b> |
|-------------|----------|----------|-----------|----------|--------------|------------|
| 2000        | 37.07    | 13.59    | 9.19      | 3.40     | 7.37         | 3.52       |
| 2001        | 37.96    | 13.22    | 9.38      | 3.38     | 8.56         | 3.42       |
| 2002        | 40.00    | 13.77    | 10.41     | 3.19     | 9.04         | 3.58       |
| 2003        | 44.56    | 15.56    | 11.61     | 3.57     | 9.76         | 4.07       |
| 2004        | 42.41    | 15.05    | 12.24     | 3.33     | 7.56         | 4.23       |
| 2005        | 43.12    | 14.90    | 12.95     | 3.53     | 8.14         | 3.61       |
| 2006        | 42.57    | 14.93    | 12.45     | 3.26     | 8.14         | 3.79       |
| 2007        | 41.33    | 14.58    | 11.67     | 3.05     | 8.02         | 4.02       |
| 2008        | 42.13    | 14.56    | 12.25     | 2.84     | 8.52         | 3.97       |
| 2009        | 46.25    | 16.16    | 13.51     | 2.56     | 8.49         | 5.53       |
| 2010        | 46.17    | 15.85    | 14.36     | 2.25     | 8.48         | 5.23       |
| 2011        | 46.01    | 15.99    | 14.63     | 2.37     | 8.51         | 4.51       |
| 2012        | 46.28    | 15.76    | 15.10     | 3.15     | 8.26         | 4.00       |

Caption to Table 1: All entries are in percentage points relative to GDP. G denotes total government expenditures, W are total public sector wages, ST are social transfers, I is the interest expense on outstanding government debt, Other denotes other expenditures, and CAP are capital expenditures.

**Table2: Relaxation of Liquidity Ratios**

| Date<br>(end-year) | Currency | Constraint | Deposits | Mix | Required<br>Liquidity | Required<br>Total | Total<br>Deposits | Liquidity<br>Constraint | Available<br>to Lend |
|--------------------|----------|------------|----------|-----|-----------------------|-------------------|-------------------|-------------------------|----------------------|
| Dec-07             | Pounds   | 0%         | 18,485   | 55% | -                     | 11,169            | 33,377            | 33%                     | 22,208               |
|                    | Other    | 75%        | 14,892   |     | 11,169                |                   |                   |                         |                      |
| Jan-08             | Euro     | 25%        | 17,953   | 55% | 4,488                 | 15,370            | 32,462            | 47%                     | 17,092               |
|                    | Other    | 75%        | 14,509   |     | 10,882                |                   |                   |                         |                      |
| Dec-08             | Euro     | 25%        | 17,896   | 54% | 4,474                 | 15,683            | 32,841            | 48%                     | 17,158               |
|                    | Other    | 75%        | 14,946   |     | 11,209                |                   |                   |                         |                      |
| Dec-09             | Euro     | 20%        | 16,213   | 54% | 3,243                 | 12,781            | 29,839            | 43%                     | 17,058               |
|                    | Other    | 70%        | 13,627   |     | 9,539                 |                   |                   |                         |                      |
| Dec-10             | Euro     | 20%        | 22,680   | 54% | 4,536                 | 18,333            | 42,390            | 43%                     | 24,057               |
|                    | Other    | 70%        | 19,710   |     | 13,797                |                   |                   |                         |                      |
| Dec-11             | Euro     | 20%        | 20,704   | 54% | 4,141                 | 16,332            | 38,120            | 43%                     | 21,788               |
|                    | Other    | 70%        | 17,416   |     | 12,191                |                   |                   |                         |                      |
| Dec-12             | Euro     | 20%        | 21,047   | 54% | 4,209                 | 16,897            | 39,172            | 43%                     | 22,275               |
|                    | Other    | 70%        | 18,125   |     | 12,688                |                   |                   |                         |                      |

Notes to Table 2: Cyprus entered the Eurozone on January 1<sup>st</sup> 2008. The constraint on holding liquidity based on total deposits depended on the currency denomination of the deposit. In November 2007 the decision was made to change the precautionary liquidity constraint from 0% on Cyprus pounds to 25% for the new currency (euros) and keep it at 75% for foreign currencies (labelled “other” in column currency). On 30/09/2008 the decision was taken to relax each constraint from 25% to 20% and from 75% to 70%, effective from 31/03/2009. Mix computes the ratio of local to total deposits, required liquidity is based on the constraints and the evolution of deposits and required total is the total required liquidity. Total deposits computes the total available deposits from non-MFIs and the liquidity constraint computes the effective constraint based on the mix of deposits. Available to lend computes the available funds to be lent out after the constraint is met. Data are taken from the website of the CBC, Table 2, Total deposits of Non-MFIs held with MFIs, by currency.

**Table 3: Balance Sheets of Select Greek Banks**

|                           | <u>30 June 2012</u> | <u>31 Dec 2012</u> | <u>31 March 2013</u> | <u>30 June 2013</u> |
|---------------------------|---------------------|--------------------|----------------------|---------------------|
| Assets, Piraeus           | 46.3                | 70.4               | 85.9                 | 95.0                |
| Assets, NBG (G/B)         | 103.8/81.0          | 104.8/77.9         | 104.2/76.8           | 110.4/82.8          |
| Assets, Alpha (G/B)       | 57.0/52.9           | 58.3/53.8          | 71.8/51.2            | 74.2/69.0           |
| Liabilities, Piraeus      | 48.6                | 72.7               | 84.6                 | 85.5                |
| Liabilities, NBG (G/B)    | 106.1/84.8          | 106.8/81.9         | 105.9/80.7           | 102.8/76.9          |
| Liabilities, Alpha, (G/B) | 56.0/53.2           | 57.5/54.2          | 68.1/51.4            | 66.2/62.3           |
| Equity, Piraeus           | -2.3                | -2.3               | 1.3                  | 9.5                 |
| Equity, NBG (G/B)         | -2.3/-3.8           | -2.0/-3.9          | -1.7/-3.9            | 7.6/5.8             |
| Equity, Alpha (G/B)       | 1.0/-0.3            | 0.8/-0.4           | 3.7/-0.2             | 8.0/6.7             |

Notes to Table 3: All values are in billions of euros at date given from the reported balance sheets of each bank available at their respective investor relations websites. G denotes the group and B the individual bank in Greece. NBG is the National Bank of Greece. Alpha Bank's group balance sheet increased in the first quarter of 2013 due to the acquisition of the entire share capital of Emporiki Bank on 01/02/2013. The banks were recapitalized through HSM in May 2013.

**Table4: Bank Deposits owed by the Cypriot Banking System**

| Year | Bank deposits owed to MFIs | Bank Deposits owed to Non-MFIs | Bank deposits owed to MFIs and Non-MFIs | Bank deposits owed to MFIs to GDP (%) | Bank Deposits owed to Non-MFIs to GDP (%) | Bank deposits owed to MFIs and Non-MFI to GDP (%) |
|------|----------------------------|--------------------------------|---|---------------------------------------|---|---|
| 2012 | 21,070.4                   | 73,917.9                       | 94,988.3                                | 117.8                                 | 413.3                                     | 531.1   |
| 2011 | 26,926.8                   | 74,244.0                       | 101,170.8                               | 149.8                                 | 412.9                                     | 562.7   |
| 2010 | 35,201.9                   | 83,032.3                       | 118,234.2                               | 202.2                                 | 477.0                                     | 679.3   |
| 2009 | 44,323.9                   | 73,476.4                       | 117,800.3                               | 263.0                                 | 436.0                                     | 699.0   |
| 2008 | 32,803.4                   | 72,603.1                       | 105,406.4                               | 191.2                                 | 423.2                                     | 614.4   |

Notes to Table 4: All values are measured in Millions of Euro

Sources: Statistical Service of the Republic of Cyprus (Nominal GDP), ECB for deposit data.