

# Fairness and reflexivity in the Cyprus bail-in

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## ABSTRACT

The Cyprus debt crisis provides some unique lessons on crisis management. By the time an assistance program was agreed with the Troika, the problem had become so complex that a depositor bail-in was implemented. This was a policy first for Eurozone and is now becoming a blueprint for dealing with future banking crises. This paper examines the events for the one-year period before the two eurogroup meetings on Cyprus on 17 and 25 March 2013 and the resulting resolution of the two systemic banks of the country with depositor bail-in. We show how delays in dealing with the crisis exacerbated the problem but also how the tools brought in to solve the problem created significant adverse side effects. Available evidence questions the validity of confidential studies guiding the policy decisions on depositor haircut and argues that the implemented bail-in violated international principles of fairness.

Keywords: crisis, banking, depositors, crisis management, Cyprus.

JEL codes: E32, E44, E63, F32, F34, G33.

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## 1. Introduction

On 4 October 2010 the newspaper *Khaleej Times* of United Arab Emirates published a special supplement for Cyprus titled «*Celebrating 50 years of resilience and growth*». President Christofias had written in his message: «the island provides a stable economic environment that guarantees trust and security»<sup>1</sup>. Within the next eight months the island economy, with a GDP of €18 bil. amounting to 0.2% of the EU economy, presented a “perfect debt crisis”, one of the most complex of the Eurozone (Zenios 2013b). In May 2011 the government loses access to the international markets, in October Cypriot banks suffer losses of €4.14 billion from the haircut of Greek government bonds<sup>2</sup> and by March 2013 the safe «springboard for European investments in the Middle east, Africa and Asia» is (virtually) in default. Private deposits are confiscated from bank accounts and «European investments» are subjected to capital controls. Five years after joining the common currency Cyprus becomes a guinea pig for bank resolution tools and the “botched fiasco” of depositor bail-in makes headline news internationally.

What happened? There is no simple answer. Complex systems fail in complex ways and systemic crises usually result from a combination of bad management and bad luck, revealing multiple and substantial failures of institutions and people of authority.

Cyprus joined the EU in 2004 and the eurozone in 2008. These were significant achievements but risks were looming. The safety and stability promised by the common currency attracted huge amounts of foreign capital as illustrated in Figure 1. The country was unable to handle the situation due, it seems, to the same factors that contributed to the crises of other countries: (a) Prerequisites for crisis, (b) contagion, (c) herd behavior, (d) faulty lending, (e) insufficient auditing, (f) inadequate supervision, (g) spendthrift government, (h) unfunded government guarantees (Commission 2011). We will see that during the crucial periods the Government followed a policy of procrastination, either incapable or unwilling to act.

### Phases of the Cyprus crisis

It is instructive to view the crisis in three distinct phases:

1. The period up to the onset of the international crisis in 2008.

During this period, households and corporations --and to lesser extend, government-- accumulate excessive debt. The country's competitiveness erodes but the emerging imbalances are obscured by a banking sector that is overdeveloped with the inflow of foreign deposits; Figure 1. Aggregate debt at 2008 stood at 333% of GDP, 10bp higher than the OECD average, and the banking sector assets were 700% of GDP. Bank loan-to-deposit ratios for residential loans increase from 1.4 in 2006 to 2.1 by 2013. See (Zenios 2013b) for a discussion of the state of the economy at the time. Debt fragility created conditions for Cyprus economy to suffer a heavy blow when the international crisis erupted. During this period we witness a textbook case of capital inflows problem (Calvo, Leiderman, and

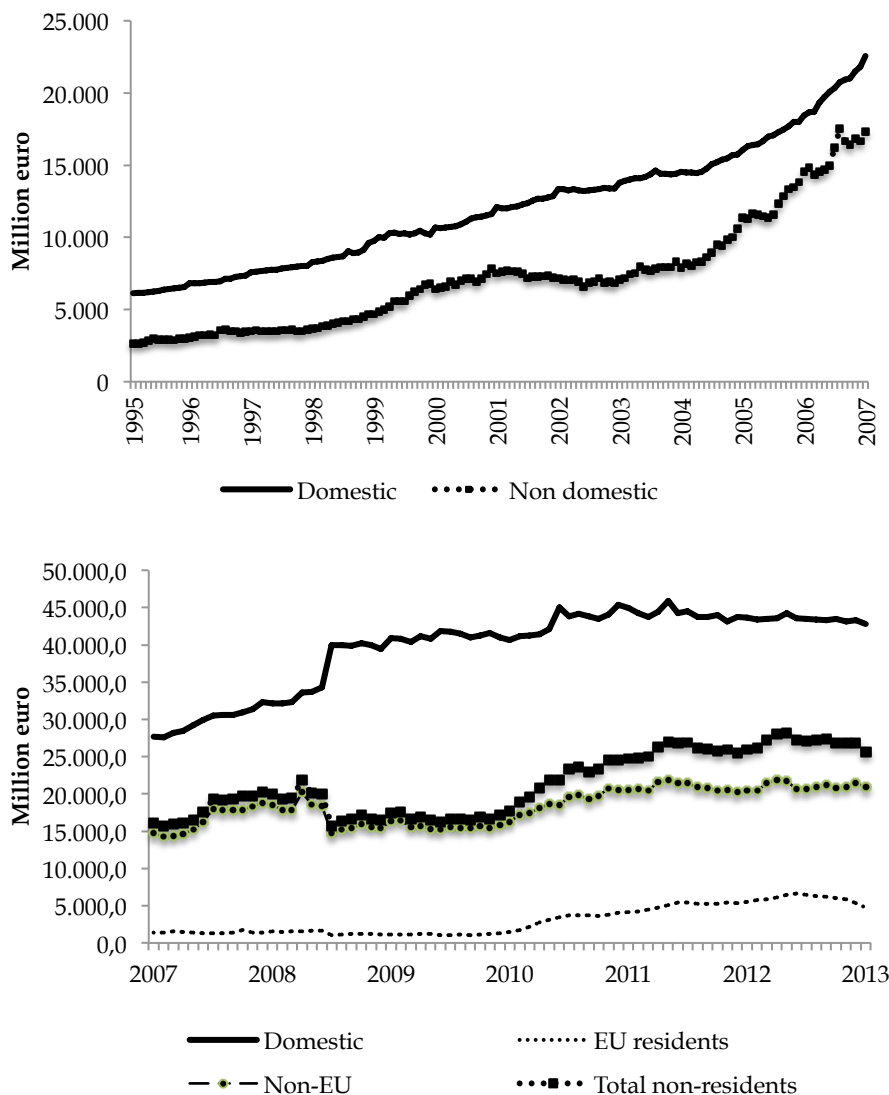
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<sup>1</sup> Quotes in this paragraph form President Christofias message; the “botched bailout” characterization from Forbes magazine, <http://www.forbes.com/sites/eamonnfingleton/2013/03/18/the-botched-cyprus-bailout-european-markets-roll-with-the-punches/>

<sup>2</sup> Known as PSI, “private sector involvement” exchanged Greek government bonds (GGB) with new long-term GGB and European Stability Fund (ESF) bonds with a nominal discount of around 50% and much higher fair value discount. PSI and PSI+ took place on July 21 and October 26, 2011.

Reinhart 1994). Michalis Sarris, Minister of Finance under President Papadopoulos (2003-2008), had warned the President «if he had a second term, towards its end he may have to ask the EU for assistance»<sup>3</sup>.

**Figure 1. Deposits with Cyprus financial institutions**



*Note: Top and bottom figures refer to different time periods and the classification of domestic and non-domestic is not identical during these periods so some discontinuity is present. Nevertheless the trends are clear.*

2. The period 2008-2011 when Cyprus government loses access to capital markets and banks suffer significant losses from the Greek government bond haircut.

During this period public debt grows from 52.9% GDP in the first quarter of 2008 to 71.1% GDP by the end of 2011. Cypriot banks engage in carry trade with ECB funding and Greek government bonds building significant concentration risk in the Greek sovereign and suffer losses of €4.14 bil. from the Greek PSI in October 2011 (Acharya and Sascha 2013; Zenios 2013a). As a percentage of GDP Cyprus banks suffered the most severe impact from all

<sup>3</sup> Statement during the public hearings of the Special Investigation on May 15, 2013.

Eurozone countries, see Table 1. The joint effect of public debt accumulation and deterioration of the banks' balance sheet set in motion the negative feedback loop between banking and public finances, an interdependence well documented in the literature (Mody and Sandri 2011). Cyprus had entered the "crisis zone" (Cole and Kehoe 2000) and without any policy measure to reduce public debt it was headed for default and only the timing was unknown. It is worth noting that market access was lost on 30 May, before the explosion of 11 July at a Naval military base destroyed the country's main power plant. This is a period of risk *misjudgment* that led to accumulation of problems.

**Table 1. Impact of Greek PSI on banking sector of eurozone countries**

	Cyprus	Greece	Germany	Belgium	France	Portugal
Haircut loss bil. euro	4,14	24,3	3,6	2,1	5,04	0,42
% of GDP	23.03	11.65	0.14	0.56	0,25	0,25

Source: EBA and author's calculations. EBA data available at <http://www.eba.europa.eu/documents/10180/15935/CY006.pdf>

3. The period 2012-2013 when Cyprus negotiates an assistance program with its international lenders at two eurogroup meetings on 17 and 25 March 2013.

This is a critical period of procrastination when the initial banking losses of €4.14 bil. mutate into a huge problem of more than €21.6 bil.; see Section 4. This amounts to 130% of GDP and bailing-in bank depositors appear unavoidable. *Mismanagement* of the crisis during this phase leads to the final collapse.

An analysis of the first phase is provided in (Zenios 2013b). This paper focuses on the critical second phase. First, we will note significant procrastinations, made possible by keeping Cyprus Popular Bank (CPB)<sup>4</sup> «on life support until the Presidential elections» using Emergency Liquidity Assistance (ELA)<sup>5</sup> (Section 2) and will see how the handling of ELA was misguided and exacerbated the problems (Section 3). The tipping point was reached after a due diligence study by PIMCO exaggerated the estimates of the banking needs pushing the country's debt into unsustainable levels (Section 4). The PIMCO study was used to guide data-driven policy on an issue where overestimating losses could create a self-fulfilling prophecy as suggested by the models of (Cole and Kehoe 2000); reflexivity appears to have been critical in the collapse of the Cyprus economy (Section 5).

## 2. Delay tactics

Following the Greek PSI, the two largest systemic banks of Cyprus –Bank of Cyprus (BOC) and CPB- needed recapitalization. On 18 May 2012 the Parliament approved government funding up to €1.8 bil for recapitalization of CPB, in case sufficient funds were not raised from private sources. By the deadline of 30 June the bank had raised a mere €3 mil. and taxpayers were left footing a bill of €1.761 billion. This bill wouldn't come due until June

<sup>4</sup> CPB was the country's second largest systemic bank; also known as Laiki by its greek name and Marfin-Laiki following a controversial merger and acquisition.

<sup>5</sup> Quote from Central Bank Governor Panicos Demetriades in an Interview to the Cypriot edition of KATHIMERINI of March 26, 2013.

2017, but, first, the country could not afford it, and, second, was paying for saving an insolvent bank.

Parliament was presented the recapitalization bill by the Ministry of Finance, with an ultimatum that the bank would collapse. Indeed, if CPB did not secure sufficient capital by 30 June it would lose its license, leaving the government with deposit guarantees estimated at €7 bil. There was just enough time to approve the government underwriting, give the tightest deadline to raise private capital and, eventually, as expected, recapitalize CPB with taxpayer money.

Things did not have to come to that. CPB capital requirement had been determined by EBA stress tests in July 2011. In December, the Board of Supervisors asked national authorities to require troubled banks to build up a buffer Core Tier 1 capital ratio 9% until the end of June 2012. The capital shortfall of CPB, with total assets €33.7bil., was estimated at €2.663 bil. By comparison, BOC with total assets €37.5bil. and much better profit profile, registered shortfall €691 mil. The smaller Hellenic Bank, with lower exposure to Greek government bonds, had a capital shortfall estimated by Central Bank of Cyprus (CBC) at €212.8 mil.<sup>6</sup> CPB with market capitalization €200 mil. in the second quarter of 2012, could not possibly raise €2.663 bil. From December 2011 until June 2012 there was ample time to prepare resolution tools and apply them for CPB, as suggested by ECB<sup>7</sup>. (More on the ECB opinion in Section 3. Were the authorities aware of the problems?.)

Alarms were going off about the impending storm. The repeated down-ratings of the Cyprus sovereign from the end of 2010 warned about the accumulating problems, see Figure 2. Starting 2012 ratings hit non-investment grade and by the time a recapitalization decision was made, two of the rating agencies had rated government bonds to junk and the third had a negative outlook. On 25 June, the third rating agency also downgrades to junk and thereafter government bonds become ineligible for ECB operations. These downratings mirrored the ratings for the country's two major banks; Cyprus followed the destabilizing feedback loop between systemic and sovereign risks (Gray and Jobst 2013).

In May 2012 the government was forced to act to avert the bank collapse, but it had no firepower. Two days after recapitalization of CPB with taxpayer money the government applies to international lenders for assistance.<sup>8</sup> This request comes 900 basis points too late.

Figure 3 shows the CDS (Credit Default Swaps) spreads of Eurozone countries that applied for assistance. We see that Spain, Greece, Ireland and Portugal applied for assistance when their spreads were around 600 bp but Cyprus procrastinated until its spreads had exceeded 1500bp. Even after it applied for assistance, no agreement was reached for eight months while other crisis countries concluded their negotiations within one to two months. Agreement was only reached after a change of government with the Presidential elections

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<sup>6</sup> EBA stress tests at [http://www.centralbank.gov.cy/nqcontent.cfm?a\\_id=12394&tt=article&lang=en](http://www.centralbank.gov.cy/nqcontent.cfm?a_id=12394&tt=article&lang=en). Data for Hellenic from private communications. The EBA stress test focused on sovereign exposures, while the CBC analysis considered also domestic deteriorating conditions. Hellenic Bank, with estimated needs 212.8 mil. had losses of 77 mil. from the Greek PSI.

<sup>7</sup> Opinion of the European Central Bank on the recapitalization of the Cyprus Popular Bank (CON/2012/50) at [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)

<sup>8</sup> As reported by Reuters: <http://www.reuters.com/article/2012/06/27/us-cyprus-imf-idUSBRE85Q12020120627>

of February 2013. The outgoing Government was “gambling for redemption” in the model of (Conesa and Kehoe 2012), but the debt envelope was increased, reducing the crisis zone and making a crisis inevitable. The Governor of the Central Bank Athanasios Orphanides in a joint letter with ECB Governor Jean-Claude Trichet had urged the Cyprus President to take measures, raising concerns “*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>9</sup>

During this period key financial indicators deteriorated severely, as we see in the next section. However, adverse political factors also came into play:

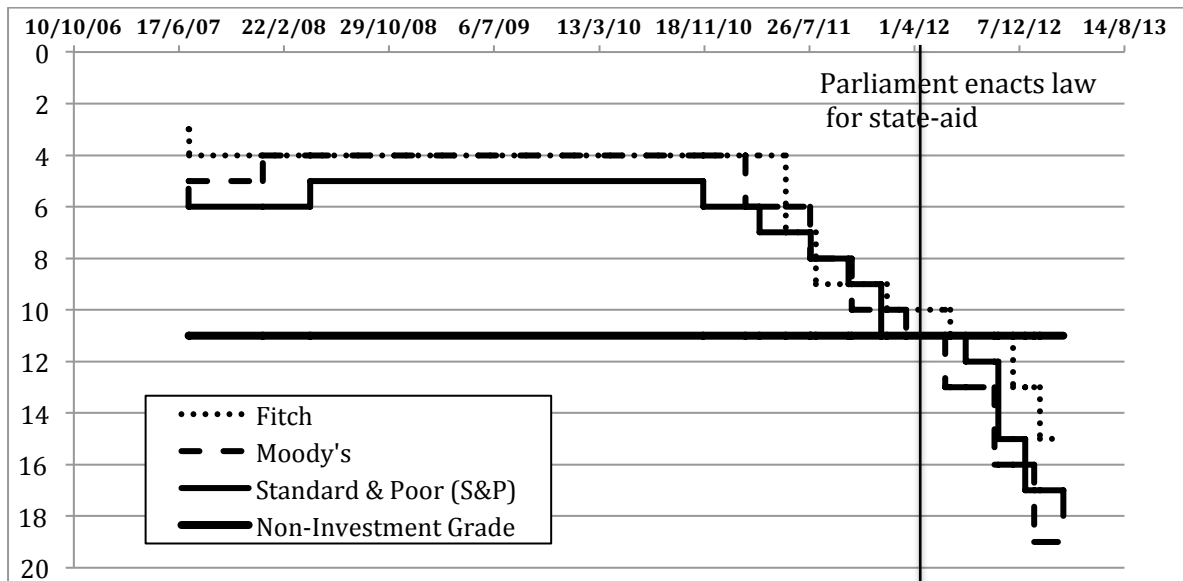
1. Cyprus missed the opportunity to negotiate an agreement together with Spain. The two countries applied together for assistance and eurogroup president Jean-Claude Juncker urged publicly Cyprus authorities on 15 Sept. 2012 to “sign the earliest a Memo of Understanding to be in the rescue package with other countries that applied for aid on March 1, 2012”. If Cyprus had negotiated together with Spain it would have been systemic for the Eurozone and reach a better deal.
2. In January 2012 Jean-Claude Juncker (Luxemburg) is succeeded as president of the eurogroup by Jeroen Dijsselbloem (Holland). As prime minister of Luxemburg, Juncker did not share the opinion --advocated by German Minister of Finance Wolfgang Schäuble and shared by his Dutch counterparty- that Cyprus’ large banking sector per se was the problem. Juncker’s statement to *Der Standard* after the eurogroup decision is characteristic of his support for the Cyprus situation: “It was the first time I wasn’t in the Eurogroup. I would have wished for a more gentle approach to small savers.”
3. The German magazine *Spiegel* writes on 5 November 2012 about a Secret Services report on money laundering of Russian funds in Cyprus. This creates political difficulties for chancellor Merkel ahead of parliamentary elections and leads to tougher German stance on a rescue package for Cyprus. It is worth noting that the anti money laundering AML index of the Basel Institute of Governance for Cyprus is 4.93, which is significantly better than the Netherlands with 5.03 or Germany with 5.80. With respect to the Financial Action Task Force, Cyprus was compliant or largely compliant with 82% of its recommendations, Germany with 59% and Netherlands with 58%.

Now we turn to the deterioration of key financial indicators during this period.

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<sup>9</sup> Letter of J-C. Trichet and A. Orphanides to President Christofias, 15 Dec. 2010, Frankfurt.

**Figure 2 Credit rating of Cyprus government**



**Figure 3. Spreads of 5-year CDS of government bonds for European countries under assistance programs.**

(Marked with a triangle are the dates of applying for a assistance and with bullet point the dates of reaching agreement. Graph as presented by A. Orphanides at the Tassos Papadopoulos Center Conference on "Five Years Euro", 17 May 2013. ).



### 3 Emergency Liquidity Assistance to Cyprus Popular Bank

Starting in September 2011, CPB resorts to ELA. The initial amount of €300 mil. had grown to €9.1bil by the time the bank was led into resolution in March 2013; see Figure 4. Note the rapid increase from €3.8bil on 15 May to €9.6bil. The increased reliance on emergency assistance was prompted by a series of events: (i) Greek elections with the risk of euro exit cause outflows of €2bil. from the Greek branches of CPB, (ii) downgrading of a €1.3bil. covered bond, and (iii) downgrading Cyprus sovereign debt by Fitch renders €2.6bil. Government bonds on the bank's portfolio ineligible for normal ECB operations.

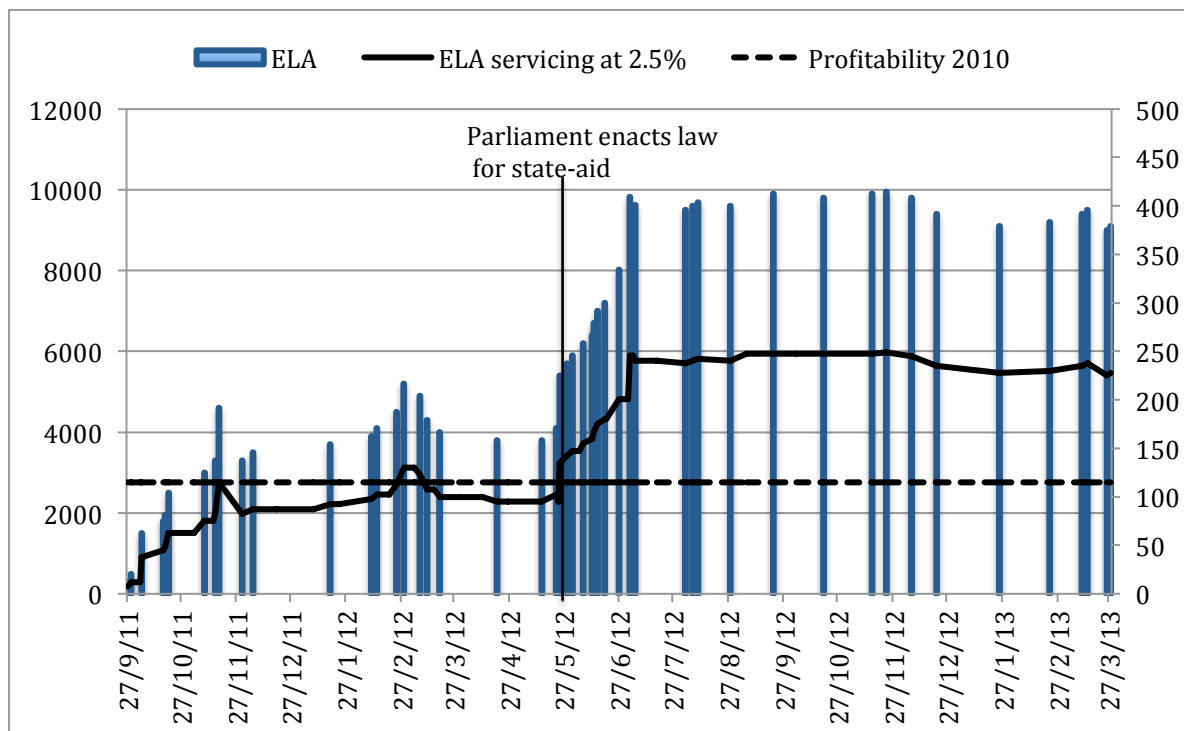
Published financial indicators of the Bank for 2005-2012, Figure 5, raise concerns if the bank was solvent during this period. By the end of 2011 when the bank starts drawing ELA, reserves and profits were negative. Comparing the cost of ELA with bank profitability (Figure 4) we notice that CPB was not in a position to service ELA past end of May 2012.

Two issues are raised:

- Did the Bank satisfy regulatory requirements for capital adequacy during the period of high ELA financing? The answer was negative after the Greek PSI, as revealed by the EBA tests, but what happened after recapitalization with the Government bond?
- Was ELA granted according to ECB rules, and in particular was the bank solvent and did it post adequate collateral?

To answer these questions one needs access to Central Bank data. Those were collected and analyzed for the Investigation Commission on the Cyprus economy who opted to keep this analysis confidential, so we answer based on publicly available data.

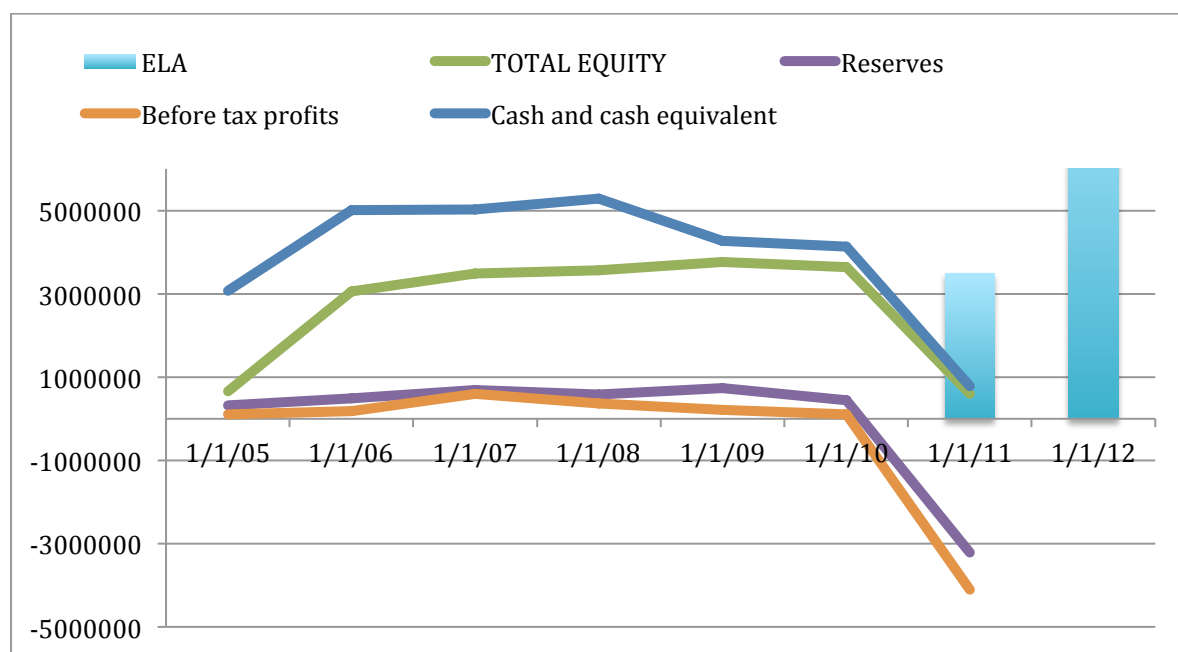
**Figure 4. Emergency liquidity assistance to CPB Bank, 2011-2013.**



**Note.** The continuous line is the cost of financing of ELA as per ECB rules. The dotted line is the bank profitability before taxes as of 2010. ELA is measured on the left axis and the cost of ELA and bank profitability on the right; All in millions of euro.



Figure 5 Cyprus Popular Bank financial indicators and ELA, 2005-2012



Source: CPB accounts.

#### Was granting of ELA to Cyprus Popular Bank an act of prudence?

The fact that CPB went into resolution tells us that at some point it had become insolvent. From Figure 4 we observe that the lines for cost of ELA and bank profitability intersect at the end of May 2012. After this point the bank cannot service its ELA debt, even if its profits do not deteriorate further. Without any prospects for significant positive changes the bank becomes insolvent.

Further evidence is obtained from the transfer of ELA and the associated collateral from CPB to BOC as part of the resolution procedure. Based on publicly available data Xiouros and Zenios<sup>10</sup> estimate an ELA-financing gap of €0.5--€3.5 bil. to be absorbed by BOC; this would indicate violation of ECB rules that require adequate collateral. BOC top managers Evdokimos Xenofontos and Yiannis Kypri in their sworn deposition to the Investigation Commission expressed doubts that BOC received adequate collateral to cover the ELA obligation. Xenofontos estimates the gap at €3.4 bil. which is on the high-end of the Xiouros-Zenios estimate (see (Pikis, Kramvis, and Nicolaou 2013) p. 91).

Hence, publicly available data and key witnesses suggest that ELA was granted to an insolvent bank with insufficient collateral.

We recognize that the evidence is not definitive without access to Central Bank data. Also, the distinction between liquidity and solvency problems is blurred during a crisis and with different handling what may appear as an insolvency situation could turn around with temporary liquidity support. However, this would be speculative on our part and while recognizing the limitations of our analysis, it is hard to see what information could overturn our conclusion. As we argue next, the authorities were aware of the insolvency situation.

<sup>10</sup> See C. Xiouros and S.A. Zenios <http://blog.stockwatch.com.cy/?p=1734>, (in Greek).

## Were the authorities aware of the problems?

Public statements show that the authorities were aware of the problems but justified their actions otherwise. An ECB opinion on recapitalizing CPB is revealing (my underlines):

### (a) Recapitalization versus resolution

“In view of the fact that the support measures aim to address solvency problems at a financial institution, the ECB considers that the objectives pursued may be better achieved through bank resolution tools. A fully-fledged resolution regime, comprising tools such as bridge banks, asset separation and transfer of business would offer legally sound means of resolving institutions on the brink of insolvency, safeguarding financial stability, whilst addressing stakeholder rights.”

### (b) Financial stability considerations

“recapitalization of banks with funded or, a fortiori, unfunded government bonds has a number of drawbacks from a financial stability perspective. More specifically, market participants may not regard the injection of unfunded recapitalization bonds as a credible recapitalization technique, as it does not result in the provision of fresh cash to the bank, and thus may not help restore market access. Despite the fact that it can serve as a means of meeting the capital adequacy ratio, recapitalization through the injection of such unfunded recapitalization bonds can only change the risk absorption capacity of the bank gradually over time, as cash flows associated with these bonds are accumulated. Also, recapitalizations through government bonds forming part of the bank’s assets can reinforce the feedback loop between the state and the bank. This is to be avoided.”

ECB was concise in its warnings. However, its opinion was requested by the Ministry of Finance on 30 May, twelve days after the recapitalization measures were enacted into law, and was issued on 2 July, two days after the recapitalization deadline passed. (It then remained confidential for six months.) ECB has a mandate to provide opinions on measures that affect financial stability and its opinion should have been solicited on time and made available to the Parliament. From the EBA warnings of December 2011 until June 2012 when action was needed, there was ample time to seek ECB opinion.

CBC adopted a diametrically different position than ECB. They argued that CPB would become solvent via the assistance program. This argument was made by then deputy-Governor Spiros Stavriniakis to the Investigation Commission and was reiterated by the Governor (see (Pikis, Kramvis, and Nicolaou 2013) p. 132-133 and p. 141, respectively).

Spyros Stavriniakis (my translation): *“even if capital adequacy indicators were below the minimum requirement [...] there was the prospect of an assistance program and therefore it was the position of the Central Bank that Laiki Bank, if it was not solvent could become solvent because of the prospects of the program and the signing of agreement”*.

Panicos Demetriades (my translation): *«The Central Bank continued to provide emergency liquidity assistance to Laiki Bank, kept the license of Laiki Bank on the basis of the application of the Government of the Republic for assistance»*.

The CBC officers admit that the CPB was insolvent but solvency would be restored via the assistance program. These explanations are wrong. Without a European mechanism to recapitalize directly banks, ELA does not work as the Governor and his deputy argued.

## 4. Fairness of the bail-in

Once it became unavoidable that international assistance was needed, investment firm PIMCO was retained by CBC to conduct a bottom-up, loan level due diligence of the Cyprus banking system<sup>11</sup>. The objective was to quantify the capital needs of Cyprus financial institutions, thereby determining the needs of a rescue package as far as the banking sector was concerned. The study was conducted at the direction of a Steering Committee comprised of representatives from CBC (and other Cypriot authorities), European Commission, ECB, European Financial Stability Facility/European Stability Mechanism, EBA and the IMF as observer. Capital requirements were estimated under *base* and *adverse* macroeconomic scenarios established by the Steering Committee for a forecast period extending to 30 June 2015.

The adverse scenario estimates were used by the international lenders to evaluate the banking capital needs. This number was added to the fiscal deficit and the need to refinance public debt and an overall number was reached. Based on these estimates, decisions were made for resolution of CPB, the amount of the rescue package and the decision to bail in depositors. The haircut of 47,5% to BOC depositors was also driven partly by the PIMCO estimates although for the final decision a new study was carried out by KPMG.

Under the adverse scenario the aggregate capital shortfall for all participating institutions is €8,867 million, based on a total loss absorption capacity of €13,007 million less expected losses of €18,542 million and required Core Tier 1 capital of €2,987 million as of 30 June 2015<sup>12</sup>. The overall loss rate for loans across all participating institutions over the three-year forecast period was estimated at 23% of existing gross loans and new loans originated during the forecast period. For domestic banks –BOC, CPB and Hellenic- the aggregate capital shortfall is €8,128 with an overall loss rate over the forecast period of 24.8%. The aggregate capital shortfall for co-operatives is €589 million with an overall loss rate of 17%.

The PIMCO estimate of €8,867 mil. for the needs of the banking sector was added to the government debt of €12,777 mil. The total €21.6 bil. is 130% of the country's GDP and is considered unsustainable. That is why the solution of bail-in was devised to secure €5,8bil. from depositors, various amounts from debt rollover, privatizations and gold sales, and to limit the program financing needs strictly to €10bil.

We quote from the EC debt sustainability report<sup>13</sup>: "Recapitalization needs arise from expected losses estimated by PIMCO in an adverse scenario and to ensure that the banks remain sufficiently capitalized at 9% core tier one. In response to the results of the due diligence exercise, BOC and CPB have been intervened and restructured and thus programme money will not be used to recapitalize Laiki and BOC. Against this background, the recapitalisation of the remainder of the restructured banking sector amount to around

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<sup>11</sup> The report is available at <http://ftalphaville.ft.com/files/2013/04/reportasws.pdf.pdf>.

<sup>12</sup> Results obtained from Figure 7 of the PIMCO study.

<sup>13</sup> European Commission Directorate General Economic and Financial Affairs, *Assessment of the public debt sustainability of Cyprus*, Provisional draft, 9 April 2013.

EUR [2.5] bn over the programme period, taking into account that further recapitalization needs may arise in the case of higher-than-projected loan loss provisions. The recapitalisation bond injected in Laiki in June 2012 is not replaced by ESM financing.”

The PIMCO estimates were crucial for the eurogroup decision of March 2013. Excessive loss estimates would increase the haircut imposed on uninsured depositors of CPB and BOC. Insufficient loss estimates would make the program fail, as future losses would exceed the program provisions. It seems that the PIMCO study, while reasonable methodologically, made assumptions that led to significant overestimation of the banking sector needs. Three follow up studies can be used to assess the accuracy of the PIMCO estimates:

- i. BlackRock, commissioned by CBC to assess the reasonableness of PIMCO.
- ii. KPMG, commissioned by CBC as the resolution authority for BOC.
- iii. Clayton/Eurorisk, commissioned by the Board of Directors of Hellenic.

From the BlackRock study we can learn any assumptions or methodological approaches of PIMCO that would lead to overestimation of losses. The KPMG and Clayton/Eurorisk use their own alternatives to PIMCO models for estimating losses and hence can be used to verify the PIMCO estimates.

All these studies are carried out by competent professionals and it is not uncommon for forecasting exercises to differ. Some differences could be resolved if the teams could engage in discussions. Methodological disagreements are usually resolved following an exchange of reasoned arguments. However, when the differences are a result of underlying assumptions then it is anybody’s guess what the right assumptions are. The end-user should demand transparency to understand how the assumptions impact the forecast. In the case of PIMCO, there is limited transparency on the dataset used and the statistical analyses performed. Combining the lack of transparency with the impact of the overlay assumptions made by the Steering Committee make it challenging to check the results.

Limited transparency wouldn’t have been a problem if subsequent studies converged to similar estimates with PIMCO. However, when there are significant differences, then the lack of transparency raises doubts on the results. That is, as long as everybody agrees on the projections coming out of a black-box then the box is considered trustworthy. In case of disagreements, however, the users of the black-box have a responsibility to pry it open.

Unfortunately, the studies that followed PIMCO are confidential and we work again from publically available data. From press reports –checked for accuracy by the author- we learn that the Clayton/Eurorisk study estimates that Hellenic would have a surplus of €16 mil. Instead of capital shortfall of €333 mil. under the PIMCO adverse scenario<sup>14</sup>. This implies a downward adjustment of PIMCO loss estimates by 21%; see Table 2.

Athanasios Orphanides, Governor of CBC until 2 May 2012, in his deposition to the Investigation Committee stated that «until April [of 2012] the banking system needs were around 2 bil.»<sup>15</sup>. The recapitalization needs obtained by adjusting the PIMCO estimates based on the Clayton/Eurorisk study are very close to Orphanides’ estimate. Hence, we have two publicly available estimates that point in the same direction: significant downward adjustment of the PIMCO estimates.

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<sup>14</sup> Newspaper *Alitheia*, Friday 9 August 2013, p. 39.

<sup>15</sup> Statement from the public deposition of Athanasios Orphanides to the Investigation Commission; this part of his deposition is not included in the Commission’s report.

**Table 2. Needs of the Cyprus banking system after adjusting the PIMCO estimates based on the study by Clayton/Eurorisk (mil. Euros)**

	BOCY	CPB	Hellenic	TOTAL
PIMCO expected loss estimates	(6,894)	(7,313)	(1,685)	(15,892)
Adjustment by 21%	(5,446)	(5,777)	(1,331)	(12,554)
Loss absorption capacity	3,997	4,540	1,619	10,156
Banking system needs - PIMCO	(2,897)	(2,773)	(66)	(5,736)
Banking system needs - 21% adjustment	(1,449)	(1,237)	288	(2,398)
A. Orphanides estimate	NA	NA	NA	(2,000)

Of course the ex-Governor of CBC has reasons to downplay expected losses from bank policies followed under his watch and he has been a vocal critic of his successor and the PIMCO study. Similarly, Clayton/Eurorisk has reasons to be biased in favor of their client. So, we obtain further information from the first IMF review of the Cyprus program (IMF 2013).

The IMF report refers to both KPMG and PIMCO to state “both exercises estimated probabilities of default and loss given default. While the two exercises are not directly comparable [...] preliminary estimates suggest that overall losses on the end-March portfolios were similar, even as KPMG projected somewhat lower peak NPLs.” While the IMF review finds that the KPMG study produced similar estimates to PIMCO, let us look at the differences of peak non-performing loans under the two studies in Table 3. The KPMG estimates are on average 17% lower than PIMCO; this is comparable to the 21% downward adjustment suggested from Clayton/Eurorisk and provides further support to the analysis of Table 2 that the needs of the Cyprus banking system were closer to €2.4 bil. instead of €5.7 bil. estimated by PIMCO. This implies that the haircut of deposits could have been less than half of the 47,5% imposed.

**Table 3 Non-performing loans under the KPMG and PIMCO studies**

	KPMG		PIMCO	
	SMEs	Retail	SMEs	Retail
Bank of Cyprus	45	40	57	50
Cyprus Popular Bank	48	35	50	45

How come IMF concludes that the two studies suggest similar overall losses? We must take into account that the KPMG study was conducted after the sales of the Greek operations of Cypriot banks, and it was done based on a deeper recession projection than the PIMCO adverse scenario. Hence, the KPMG estimates verify PIMCO only under much worse overlay assumptions and after Cypriot banks shed assets under unfavorable terms.

The argument is made that the PIMCO losses have been realized a year after the study was carried out and therefore the PIMCO adverse scenario projections appear accurate ex post. But this, as we argue next, could be the case of a self-fulfilling prophecy.

Before we analyze the adverse effect of the loss estimates, we argue that the bail-in process failed some important tests of fairness. The country avoided unsustainable levels of debt

and a potential debt restructuring or default by restructuring bank liabilities. Thus, we have a case where creditors and debtor work together to avoid default -creditors are the bank depositors and the debtor is the bank- and the *Principles for Stable Capital Flows and Fair Debt Restructuring* should have applied (Group 2013). These principles incorporate voluntary, market-based, flexible guidelines for the behavior of debtors and creditors with a view to promoting and supporting financial stability. While they are not legally binding they have been proven effective in dealing with sovereign debt restructuring. Until October 2010, the Principles applied only to sovereign issuers in emerging markets, but their applicability has since been broadened to encompass all sovereign issuers, as well as cases of debt restructurings by non-sovereign entities in which the state plays a major role in influencing the legal and other key parameters of debt restructurings. They should have applied to the restructuring of bank liabilities decided by an intergovernmental group (the eurogroup) and Cyprus parliament law.

The Principles rest on four pillars: (i) transparency and timely flow of information; (ii) close debtor-creditor dialogue and cooperation to avoid restructuring; (iii) “good faith” during debt restructuring and (iv) fair treatment of all parties. In deciding the Cyprus bank depositors bail-in pillar (i) was not satisfied as the decisions were based on confidential studies. Pillar (ii) was satisfied as the Steering Committee for the PIMCO study involved all the key actors. “Good faith” was not questioned by any of the participants of the Steering Committee so we consider pillar (iii) satisfied. However, BOC who was to assume the major burden of CPB ELA was not consulted, its executives questioned the fairness of the deal, its Board refused to approve and resigned, and the deal was signed by the Governor of the Central Bank of Cyprus in his capacity as resolution authority casting doubts if pillar (iii) was satisfied in dealing with BOC. Furthermore, treatment of various stakeholders in the new BOC was not equitable. In particular, the bailed-in depositors of BOC contributed €3,806mil. in cash and received 3.806mil shares, i.e. €1.00 per share. CPB contributed net assets €425mil. and received 844mil shares at €0.503 per share. The capitalization of the old shareholders of BOC was €371,95mil at the time of restructuring and they received 18mil shares at €20.66 per share. If all stakeholders were given shares at the same price in proportion to their capital contribution, the capital structure of the restructured BOC would have been 82.7% bailed-in depositors, 9.2% ex-CPB and 8.1% old BOC shareholders. Instead, the current allocation stands at 81.5%, 18.1% and 0.4% respectively which indicates preferential treatment of ex-CPB at the expense of old BOC shareholders. Of course the old shareholders are the junior creditors of the bank and they expect to be wiped out in case of bankruptcy. However, the bank was restructured and not resolved –i.e., there was no bankruptcy- and therefore they should have been treated equitably with the ex-CPB, even as BOC depositors may get preferential treatment. We conclude that the fairness pillar (iv) was not satisfied.

In a perverse twist of events, while failing the transparency test where needed the bail-in creates transparency when opacity is required: With the bank shares returning to active stock market trading the bank ownership structure needs to be disclosed. Since a very large proportion 81.5% of the shares is owned by the bailed-in depositors, any disclosure of share ownership allows us to infer the amount bailed-in from each shareholder thus publicly disclosing their deposits prior to the crisis, in violation of banking privacy rules.

Fairness aside, we argue next that the excessive provisions to account for future losses could create a self-fulfilling prophecy.

## 5. Reflexivity and collapse of the Cyprus economy

The PIMCO estimate of €8,867 mil. for the overall needs of the banking sector was added to the government debt of €12,777 mil. for a total €21.6 bil. which is 130% of the GDP and is deemed unsustainable. If we apply the reduction from Table 2 –i.e., adjust downwards the needs for CPB, BOC and Hellenic but leave unaltered the needs of the Cooperative Sector– we capital needs of €5,592mil. that would bring the overall debt to the sustainable 108% GDP<sup>16</sup>. Hence, under the adjusted estimates no bail-in would be required. Wealth up to €5.8 bil. could have been preserved, avoiding liquidity risk and credit crunch with negative pressures of wealth effect on GDP. Provisions based on PIMCO numbers depressed the economy more than what it would be needed otherwise.

Based on the methodology of the Basel Institute for Banking Supervision (Cecchetti, Mohanty, and Zampolli 2011) we estimates that at 2012 levels of debt the country has a long term drag on growth of -1.30% of GDP annually, see (Zenios 2013b). An almost identical estimate is obtained if we consider the impact of the fiscal adjustment of 5.5% over four years, as stipulated in the preliminary MoU, with a fiscal multiplier of 1. Let us consider the effect of PIMCO estimates on economic growth. As (Cecchetti, Mohanty, and Zampolli 2011) point out “a 10 percentage point increase in the ratio of public debt to GDP is associated with a 17-18 basis point reduction in subsequent average annual growth”. Using the mid-value 17.5, we calculate that the PIMCO estimate, by adding 22 percentage points to the debt ratio, produces an additional annual drag of -3.85%. Clearly a much more serious adverse effect on growth is anticipated with the provisions made by PIMCO.

Note that the total drag on growth for the two year period 2013–2014, is -7.7% of GDP. The PIMCO adverse scenario was based on -7.5% projected change of GDP during this period. Hence, if we use the BIS methodology to estimate the drag on growth brought about by the PIMCO estimates we obtain the PIMCO adverse scenario that generated the PIMCO estimates in the first place. This is an example of what George Soros calls “reflexivity”: *“Distorted views can influence the situation to which they relate because false views lead to inappropriate actions”* (Soros 2010). If the economy is healthy but we have a distorted view of an imminent crisis and confiscate people’s savings to safeguard from the crisis, then we will create problems to the economy. If the confiscated wealth is substantial it could bring about the crisis we had forecasted. Ex poste one could argue that the economy was indeed facing a crisis and the measures were well justified.

This seems to have been the case in Cyprus but in a more subtle form. The economy did face problems as a result of the feedback loop between banking losses and public finance. The banking losses from the Greek PSI are 23% of GDP. If we consider the problem of public finances to be any debt exceeding the Maastricht criteria then the government’s contribution to the problem was about 25% GDP. Therefore, losses of the banking sector and excessive government debt contributed about equally to the crisis of the Cyprus economy. The estimates of PIMCO increased the banking sector needs to about 55% of the GDP, made the banking sector’s contribution to the problem about twice the government contribution and resulted into a total indebtedness of 130% of GDP which would have caused a much deeper recession. Indebtedness of 130% GDP according to the BIS

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<sup>16</sup> Note that we adjusted only the CPB, BOC and Hellenic needs by the 21% factor. In my mind a similar adjustment is warranted for the Cooperative Sector needs, but as that sector proved to have record non-performing loans revealing very poor governance I opt to use with the original PIMCO estimates.

methodology, would subtract -15.4% of GDP from growth; the IMF post bail-in projections expect a V-shaped contraction of -12.6% (Commission 2013). Hence we went from a correction of about -5.5% with the 2012 debt levels to -12.6% with the PIMCO estimates. This is an example of the “positive-feedback loop”, characterized by Soros in describing pathways by which mispricing of financial assets can distort the underlying fundamentals. In this case the mispricing of bank loans would affect the available liquidity through increased provisions and restrict credit in a positive-feedback destabilizing loop.

According to reflexivity principles, a feedback loop may give the impression that markets are often right: the market alters the economic fundamentals and the resulting distortions bring about a convergence between market prices and the fundamentals. In our case the PIMCO estimates could be confirmed *ex post*, but only because the market adjusted to a pro-cyclical policy based on the PIMCO estimates. If the Clayton/Eurorisk projections were used the recession could have been milder reducing the proportion of non-performing loans and providing justification for the later model.

Which model is then the correct to use? The one that does not have a distorted view of the situation, is the answer. This is not easy to identify and that is why models such as those by PIMCO, KPMG and Clayton/eurorisk should be viewed critically. Our comparative analysis suggests that the PIMCO loss estimates were aggressive and a less distorted view of the Cyprus economy would lower losses by 21%.

## 6. Conclusions

“Procrastination is the thief of time” Charles Dickens famously opined in *David Copperfield*. In Cyprus we have seen that procrastination is also a very bad debtor. Not dealing with the crisis during 2012-2013 resulted in accumulation of ELA and record high loss estimates of non-performing loans and made Cyprus debt unsustainable. The authorities violated a cardinal rule for dealing with crisis: decisive action and transparency (Kiander and Vartia 2011; Schubert 2011).

Could the Government act differently? Arguments are made that the government had no other option than to recapitalize CPB. Governor Demetriades stated in his opening remarks to the Special Investigation Commission that collapse of CPB “would lead to the collapse of the local financial system and raise doubts about the position of the Republic within the Eurozone”. Indeed, this would have been destructive without a legal resolution regime in place, but the authorities had ample time from December 2011 until June 2012 to pursue the resolution option as suggested by ECB.

The motives for pursuing the expedient short-term option of recapitalizing CPB and keeping it “on life support until the Presidential elections» were political. This was the statement of the Governor and while these ill-chosen words have been downplayed and arguments made that the delays were due to the Troika, the evidence submitted to the Investigation Commission indicates otherwise and the Investigation Commission placed responsibility with the Cyprus government for «the inexcusable delay in applying for assistance and reaching an agreement”, (Pikis, Kramvis, and Nicolaou 2013), page 176.

Without full transparency of the records during the critical period 2012-2013 there is still much we do not know. This paper based its conclusions on publicly available data and not on speculation or preconceptions. With access to all related studies and Central Bank records



these conclusions can be verified or refuted. Until then, they stand and provide valuable lessons.

And what about the bail-in? Bailing in unsecured depositors of failed banks has merits and is to become an integral part of the Eurozone bank resolution tools as of 2016. However some important lessons were learned from Cyprus: (1) The need to apply some Principles for restructuring bank liabilities, such as those followed in restructuring sovereign liabilities; (2) The need to identify whether the bail-in could itself create systemic problems, thereby turning the systemic impact of a failing bank we wish to avoid with the bail-in, to a systemic impact of the bank's bailed-in depositors.

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