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Study on the financial sector in Greece during the economic adjustment programmes: 2010-2018

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Study on the financial sector in Greece during the economic adjustment programmes: 2010-2018

Final Report

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June 2020



EUROPEAN COMMISSION

Directorate-General for Economic and Financial Affairs

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Luxembourg: Publications Office of the European Union, 2020.

PDF

ISBN 978-92-76-22204-0

doi: 10.2765/403158

KC-02-20-737-EN-N

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List of abbreviations

AMC	Asset Management Company
AQR	Asset Quality Review
BIS	Bank of International Settlement
BoD	Board of Directors
BoG	Bank of Greece
BoP	Balance of Payments
bps	Basis Points
BRRD	Bank Recovery and Resolution Directive
CAC	Collective Action Clause
CAR	Capital Adequacy Ratio
CEPS	Centre for European Policy Studies
CET	Common Equity Tier
CFM	Capital Flow Management
CPI	Consumer Price Index
DG ECFIN	Directorate-General for Economic and Financial Affairs
DG FISMA	Directorate-General for Financial Stability, Financial Services and Capital Markets Union
DSA	Debt Sustainability Analysis
EA	Euro Area
EAP	Economic Adjustment Programme
EBA	European Banking Authority
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECA	European Court of Auditors
ECB	European Central Bank
EEF	European Economic Forecast
EFF	Extended Fund Facility
EFSF	European Financial Stability Facility
EFSM	European Financial Stabilisation Mechanism
EIB	European Investment Bank
EIU	Economic Intelligence Unit
ELA	Emergency Liquidity Assistance
ELSTAT	Hellenic Statistical Authority
EPU	Economic Policy Uncertainty index
ESM	European Stability Mechanism
EU	European Union
EUI	Economic Uncertainty Index

EUR	Euro Area Currency
EZ	Eurozone
FBB	First Business Bank
FSR	Financial Stability Review
FT	Financial Times
FTSE	Financial Times Stock Exchange
GGB	Greek Government Bond
GLF	Greek Loan Facility
GDP	Gross Domestic Product
HAIC	Hellenic Association of Insurance Companies
HBA	Hellenic Bank Association
HDIGF	Hellenic Deposit and Investment Guarantee Fund
HFSF	Hellenic Financial Stability Fund
HKKS	Hardouvelis, Karalas, Karanastasis and Samartzis
IEO	Independent Evaluation Office
IIF	International Institute of Finance
IMF	International Monetary Fund
LAMC	Loan Asset Management Company
MFS	MacroFinancial Stability
MoU	Memorandum of Understanding
MPIR	Monetary Policy Interim Report
MPR	Monetary Policy Report
NBG	National Bank of Greece
NPE	Non-Performing Exposure
NPL	Non-Performing Loan
OECD	Organisation for Economic Co-operation and Development
OMO	Open Market Operation
PIIE	Peterson Institute for International Economics
PIICS	Portugal, Ireland, Italy, Cyprus, Spain
PSI	Private Sector Involvement
QREA	Quarterly Report on the Euro-Area
RFA	Relationship Framework Agreement
RoE	Return on Equity
SBA	Stand By Agreement
SDW	Statistical Data Warehouse
SEE	South Eastern European
SME	Small or Medium-sized Enterprise

SMP	Securities Markets Programme
SSI	Systemic Support Indicator
SSM	Single Supervisory Mechanism
TA	Technical Assistance
USD	United States Dollar
WB	World Bank
WEO	World Economic Outlook

Abstract

The three Economic Adjustment Programmes (EAPs) implemented in Greece over the period 2010-2018 aimed at stabilising the financial sector on the short-term and restore the growth prospects and the country's capacity to finance itself fully on the financial markets (fiscal sustainability) in the medium and long run. During this time, the financial sector in the country saw a major restructuring including three rounds of recapitalisations and resolutions for which the total of EUR 75 billion were assigned and extensive conditionality designed.

This study provides an independent assessment of number of aspects addressed under the three programs including the risk diagnostics of the Greek banking sector that underpinned the design of the first program, issues surrounding liquidity of the Greek banks, the design and implication of the Private Sector Involvement (PSI) for the Greek financial sector and subsequent recapitalisations and resolutions of Greek banks, as well as reasons for persistently high NPLs and the reforms of the corporate governance of the Greek banks brought by the programs. The study draws on evidence gathered through a mixed-methods approach, comprising both quantitative and qualitative research techniques.

Executive summary

European Adjustment Programs (EAPs) and the financial sector in Greece

Three Economic Adjustment Programmes (EAPs) were implemented in Greece over the period 2010-2018. The three programmes consisted of providing loans to Greece in light of the financial difficulties it was facing, conditionally on the implementation of policy measures. The basic underlying implicit ideas behind the programmes were: (i) to avoid the default of a Euro-Area member in light of the perceived contagion risks to other euro-area countries and systemic risks to the financial system; and (ii) to temporarily finance budgetary deficits, in the absence of access to capital markets, with strict limits that decline over time, and until a return to a healthier public finance situation could be achieved.

Over the period from May 2010 to August 2018, a total of EUR 288.7 billion were disbursed to Greece at favourable conditions approximately 90 per cent of which coming from the Euro-Area under various pool of funds. Different pools of funds had to be used since in 2009-early 2010, there was no EU-level facility which would allow to provide support to members of the Euro Area. Therefore, following the Greek Loan Facility, specific macrofinancial stability (MFS) instruments for euro area countries were set up, as interim arrangements (European Financial Stability Facility, European Financial Stabilisation Mechanism), before the permanent European Stability Mechanism (ESM) could be established. All, except the European Financial Stabilisation Mechanism (EFSM), have been created outside of the EU budget

All programmes had the same objectives of helping to correct unsustainable imbalances and stabilise the financial sector on the short-term and restore the growth prospects and the country's capacity to finance itself fully on the financial markets (fiscal sustainability) in the medium and long run.

To achieve these objectives, a set of conditions were agreed primarily with the European Commission (EC) in the programme's respective Memoranda of Understanding on Specific Economic Policy Conditionality (MoU) and served as benchmarks for assessing policy performance as part of the quarterly reviews. In that context, financial sector reforms under the first EAP focused largely on ensuring sufficient liquidity. Yet, given the deterioration of the situation, including looming solvency risks, financial sector reforms gained more prominence under subsequent two EAPs. Larger financial envelopes assigned to financial sector specifically were deployed subsequently reaching the total of EUR 75 bln across three EAPs, and more extensive conditionality was designed.

Overall, the Greek financial sector saw dramatic changes over the period 2010-2018. It was a subject of, inter alia, three rounds of banks' recapitalisations and resolutions, all involving over EUR 45 bln of public funding deployed in course of the three EAPs. The number of Greek banks shrank from over 30 in 2010 to 15 in 2018, and those that remained on the market had undergone a major restructuring.

Study scope, objectives and methodology

The study focused on analysing the characteristics and developments of the financial sector in Greece over the period 2010-2018 in the light of the objectives and the policies implemented during this period. It covered all three EAPs and all aspects of the programmes with relevance for the financial sector reforms in Greece during this period, in both design and implementation.

More specifically, the study addressed the following questions:

- Question 1: *To what extent did the programme analyse appropriately the banking sector risks existing before the 1st programme (including those related to banks' governance, business model, ownership structure, credit, provisioning and investment policies, asset and liability structure), with the information at hand at the time and given the international financial markets context?*

- Question 2: *What were the main reasons behind the acute liquidity needs of the Greek banking sector throughout the entire three Programmes? How successful were the measures taken in maintaining liquidity, restoring confidence (investor, depositor, interbank), and protecting financial stability?*
- Question 3a: *What were the main reasons for the significant capital losses of Greek banks? What was the impact of the Private Sector Involvement (PSI) on the Greek financial sector and banks in particular?*
- Question 3b: *How effective were the measures taken under the programme to stabilise the sector and the individual banks (e.g. recapitalisations, bank resolutions) and restore adequate capitalisation?*
- Question 4a: *What were the most important reasons behind the large and persistent increase in NPLs in Greece?*
- Question 4b: *To what extent were programme policies adequate in limiting the initial build-up of the NPL portfolio, given the underlying conditions? Subsequently, were programme policies adequate in facilitating effective NPL resolution and reduction?*
- Study question 5a: *To what extent were programme policies adequate to improve the governance of Greek banks?*
- Study question 5b: *To what extent has the Hellenic Financial Stability Fund (HFSF) played an effective role in this regard?*

The study was based on a mixed methods approach comprising the following tasks:

- Semi-structured interviews: 20 semi-structure interviews of which most with the stakeholders representing Greek authorities, the EC, ESM and IMF staff were conducted as part of the study. Representatives of the ECB did not contribute to the study. Besides, a number of written follow-ups with interviewed stakeholders further substantiated the evidence base from the interviews;
- Documentation review: An extensive documentation review incorporating, inter alia, publicly available reports from the BoG, EC, ECB, EBA as well as academic publications, economic/ financial press and private market reports was conducted. In addition, some non-publicly available documents to which access was granted by the Steering Group were also reviewed by the study team;
- Data review and analysis: The study team compiled and reviewed key financial and macroeconomic data and indicators from international and national sources including, inter alia, IMF WEO April 2019, World Bank Open Data, EBA, ECB, BoG, ESTAT, stock market index in Athens, and the data from the Greek Ministry of Finance;
- Delphi survey: Survey responses provided by 30 independent experts in economics and finance representing financial sector professionals, think-tanks and academia with an extensive prior knowledge of EAPs based on their experience with the country context and economic and financial situation;
- Critical reviews of the report: Prior to the publication, the report was subject of an in-depth reviews involving also comprehensive feedbacks provided by the EC and IMF staff.

The limitations of the study are discussed in the **Annex 1**. Overall, given number of mitigation measures undertaken, the robustness and reliability of the analysis, findings and conclusions are strong.

Study findings and conclusions

Diagnostics of the financial sector at the outset of the crisis

The Greek banking sector was generally considered to have sound fundamentals and, indeed, the crisis in Greece did not originate from the banking sector.

Although not immune to the initial blow from the global financial crisis, and with some underlying vulnerabilities, Greek banks had relatively simple balance sheet structures, limited exposure to toxic financial assets, and some of the key metrics - such as profitability and capital adequacy - were not far from those of their stronger EU peers.

Surveillance of the financial sector was less intensive at the time. This was also true of other Member States, however, and the need for more developed surveillance frameworks and activities only became evident as a result of the crisis.

Multiple sources of information fed into the diagnostics that underpinned the first EAP and these were gathered in a timely manner. In 2009, the situation in the Greek financial sector was already receiving increased attention from the institutions, including the BoG and IMF staff stress tests conducted in H1 2009. In addition, off-site diagnostics were subsequently complemented by technical missions of the European Commission, ECB and IMF staff between January 2010 - April 2010. The three institutions also took appropriate and timely measures to strengthen the supervisory capacity of the BoG and to increase the scope, frequency and granularity of the supervisory data.

Coverage of risk in selected surveillance documents published by the BoG, European Commission and the ECB prior to and during the initial stages of the crisis did not appear to be comprehensive enough. The study did not cover the BoG and three institutions' diagnostics work, whose results were *not* publicly available. The review of the publicly available surveillance work of the BoG, EC and ECB showed that some risks received little or no coverage, and there was evidence that the gravity of the situation in the Greek financial sector was underestimated. Of the three institutions, the IMF surveillance publications were the most comprehensive.

In retrospect, the risk stemming from the sovereign-banking feedback loop was one of the most critical factors affecting the liquidity and solvency of Greek banks. The recognition of the full magnitude of this risk was delayed, partly due to an underestimation of the impact of fiscal consolidation measures on the whole economy that then trickled down to the banking system. More generally, while the high exposure to Greek Government Bonds (GGBs) was broadly acknowledged as a vulnerability factor *ex post*, the discussions at the time focused less on the reasons behind such higher exposure.

Overall, the study did not find any major constraints to the analysis of the risks in the Greek banking sector prior to the first EAP, notwithstanding the issue of macroeconomic projections. The scope, frequency of the data provision and reliability of the available financial statistics underpinning diagnostics and provided by the BoG to the three institutions were found to be adequate.

Liquidity of Greek banks and measures to maintain it

When the Greek sovereign crisis erupted in 2009, Greek banks faced increasing liquidity pressures due to:

- Downgrading, which led initially to limited access (at an increased cost of funding) and later to a complete shut-down of wholesale market funding. Downgrades also affected both the value and the eligibility status of collateral for participation in the Eurosystem's monetary policy operations;
- Uncertainty and recurring Grexit fears, which led to mass deposit withdrawals. Banks lost over one-third of their deposits between January 2010 and July 2012, and almost half of their deposits between January 2010 and July 2015 (EUR 117 bln);
- Increasing loan impairment due to the deepening recession, reducing the available eligible collateral for refinancing operations.

Throughout the crisis Greek banks were heavily reliant on the Eurosystem to meet their liquidity needs. ECB's Extraordinary measures to provide liquidity via the Eurosystem included: (i) suspension of the link between sovereign credit ratings and

eligibility of collateral for refinancing operations; intervention directly in the government bond market under the securities markets program (SMP); (iii) acceptance of uncovered bank bonds guaranteed by the government as eligible collateral for refinancing operations. However, overtime as wholesale funding markets remained closed and banks' access to Eurosystem refinancing suffered due to a lack of eligible collateral, Greek banks started relying increasingly on emergency liquidity assistance (ELA) from the Bank of Greece (BoG). ELA funding was a major source of bank liquidity in 2012–13 and in 2015-mid-2018, when it was also combined with capital controls (in June 2015 Grexit fears triggered a bank run. As banks came close to running out of funds, the government was forced to impose capital controls). In this context, access to ELA and the introduction of capital controls in 2015 were critical in preventing a collapse of the Greek banking system. There however, remains a question mark whether the capital controls were justified over a four year period, particularly as 'Grexit' fears waned. On the other hand, the still fragile liquidity profile of Greek banks prior to 2019 suggested that there would have been a degree of risk for the authorities to lift the capital controls earlier¹.

The Greek banking system has stabilised since, with deposits showing a moderate growth during the last two years and the ELA fully repaid in 2019. Although access to capital markets remains difficult, there are some positive developments in this respect. Overall, depositor and market confidence is being gradually restored.

Solvency of the Greek financial sector

The negotiations and execution of the private sector involvement (PSI) were relatively successful, despite the exceptionally challenging environment and the *sui generis* and complex character of the exercise. However, the timing of the PSI and the exclusion of some public bondholders have attracted some specific criticism in the literature and throughout the consultation process. From a macroeconomic perspective, it would have been beneficial to front-load the PSI with the perception of markets restored earlier, more limited contribution to the currency redenomination fears, larger stock of debt available for the haircut and consequent sizable savings for the state, stemming from the high cost of borrowing and debt servicing. On the other hand, there were a number of major constraints on speeding up the PSI.

As a result of the PSI, Greek banks experienced total losses of EUR 37.7 bln in their bond holdings (of which EUR 28.2 bln was held by four systemic banks) and other loans to the Greek state. This represented 10 per cent of their total assets, or 170 per cent of their total Core Tier I capital at that time, while the banks' provisions set aside for PSI-related losses were only EUR 5.8 bln. Therefore, banks net-of-provision losses from Greece's sovereign default were EUR 31.9 bln, wiping out their capital base and leaving some of the largest banks insolvent and others seriously undercapitalised. As a result of the PSI, the first recapitalisation was needed.

Banks' exposure to GGBs was already high before the financial crisis and continued to rise in the run-up to the PSI in 2012. One of the main explanations for this 'home bias' of Greek banks was government pressure. This higher exposure amplified the direct impact of the PSI on Greek banks' balance sheets, despite the fact that a similar trend of domestic banks increasing their portfolio of government bonds during the initial stage of the crisis was also observed in other programme countries - Greece was not an exception. According to the relevant literature and consistent feedback from the interviews, government pressure also resulted in Greek banks - unlike some foreign banks (in particular, the French and German banks) - failing to benefit from the opportunity

¹ as evident by the limited - although accelerating pace of - return of deposits and the fact that the ELA was fully repaid only in March 2019. Moreover, the Greek banks had to wait until the summer of 2019 to resume access to long term unsecured funding at an affordable (but still higher than peers) cost.

presented by the ECB Securities Markets Programme (SMP) facility to offload GGBs prior to the PSI.

The impact of the PSI on market confidence could not match the uncertainty brought by double elections in 2012. While the PSI had a negative impact on confidence in 2011 and 2012 (and contributed to deposit outflows, along with downgraded credit rating of the Greek banks), the evidence suggests that its effect was relatively contained and it was, in fact, the political uncertainty stemming from double elections in May-June 2012 that caused the drop in confidence between mid-2011 and mid-2012.

Among the main reasons for the significant capital losses of Greek banks were PSI-related losses, reduction in the value of GGBs due to sovereign downgrades, impairment of the assets side of the banks' balance sheets because of non-performing loans (NPLs), Grexit and related currency redenomination fears that led to deposit and funding outflows. In addition, banks' profitability was severely affected by increases in the cost of funding, negative contribution of the international operations of some banks, and an overall drop in the volume of transactions.

Approach to recapitalisation and resolution of the Greek banking sector was sound. More specifically, the implementation of an approach that hinged on the safeguarding of four systemically important 'core banks', while closing the weakest and poorly managed banks so that only sufficiently sound operations would get state support, allowed effective recapitalisation and resolution.

In terms of estimation of the costs of recapitalisation and resolution, the involvement of the BlackRock in the estimation of the credit loss projections for Greek banks under the first and second recapitalisation ensured higher transparency and reduced the risk of interference. Although hindsight suggests that the capital needs of banks were underestimated, this was primarily the result of the prolonged and severe recession (GDP shrank by 25 per cent between 2010 and 2013), together with some exogenous factors, such as uncertainty brought by the SYRIZA government, which could hardly have been anticipated during those estimations.

Overall, despite this challenging (and continuously uncertain) backdrop, the financial stability of the Greek banking system was preserved. This was managed without the major disruption that would have been caused by disorderly bankruptcies or market jitteriness due to poor design or lack of swift and transparent implementation. Importantly, all of the individual depositors were protected, irrespective of their size and type. Yet, banks remained fragile, and for several years channelled funding towards the real economy to a limited extent.

The cost of restructuring the Greek banking sector turned out to be very high. Given the negative equity of virtually all banks following the PSI, it was well understood that the state would need to incur some losses to attract private investors. The third recapitalisation - with no effective minimum price set - succeeded in minimising new taxpayer funding. This came at the cost of completely diluting the Greek taxpayers' existing stake in the four systemic banks, however: EUR 25.5 bln injected by the Hellenic Financial Stability Fund (HFSF) in banks in May 2013 was worth EUR 747 mln in November 2015.

Non-Performing Loans (NPLs)

As the recession deepened, the level of NPLs rose sharply, reaching historically high levels across all main loan categories. The share of non-performing to total loans shot up from 5.7 per cent at the end of 2008 to 48.5 per cent at the end of 2016. NPLs rose dramatically across both the household as well as the corporate sector. The highest NPL ratio was recorded for consumer loans at the end of 2015 (63 per cent). The NPL ratio for business loans touched almost 50 per cent in 2016, while the NPL ratio for mortgages was close to 45 per cent in 2018.

Mainly the result of economic contraction, it was further exacerbated by legislative changes which led to abuse by strategic defaulters. Legislative changes such as the blanket moratorium on primary residence auctions and the abuse of foreclosure protection weakened the payment culture and exacerbated the NPL problem. Several other legal and judicial impediments also contributed to the build-up of NPLs: lack of capacity and expertise within the Greek banks to deal with the growing volume of NPLs; a lengthy and inefficient judicial system; the lack of a legal framework to deal with NPLs; lack of a secondary market (for sale of NPLs) ; and loose credit conditions and lack of political will. Overall, the scale and gravity of the NPL problem was under-estimated by both the banks as well as the authorities.

A number of important reforms were implemented to reduce NPLs, including a strengthening of the supervisory framework by setting operational targets for NPL reduction, the creation of a secondary NPL market, an improved framework for recovery of collateral including e-auctions, and the removal of various legal, judicial and administrative barriers to the management of NPLs.

However, there have been shortcomings in their implementation and the direct impact has been modest so far. For example, the use of OCWs and in-court restructurings by banks and borrowers remains limited. The underlying insolvency regime remains ineffective due to institutional inefficiencies and, in the case of household insolvency, poor legal design; the share of failed auctions remains high. Rather than scaling back primary residence protection, a mortgage subsidization scheme was adopted in April 2019 that perpetuates the weak payment culture.

There have however, been some positive developments. The pace of NPL reduction has recently accelerated and the topic is high on the political agenda. The government has created a new Deputy Minister position to oversee bank reform. Banks have agreed more ambitious new NPL reduction targets (the Prime Minister has called for even further acceleration), and the 'Hercules' asset protection scheme has progressed. The Hercules Asset Protection Scheme (under which NPLs will be removed from balance sheets and securitised, backed by government guarantees) is a major step forward to clean up the balance sheets of domestic banks saddled with bad debts.

Addressing NPLs will remain a challenge for some time. Although approximately a third of NPLs (equal to EUR 35bn, have been resolved since 2015), the NPL ratio remains stubbornly high at 40.6 per cent (as of December 2019). This needs to be reduced to get the financial system functioning again and to support a sustained, robust economic recovery.

Governance aspects of the Greek banking sector

The first EAP did not include direct measures to change the governance framework of the Greek banks. Yet, according to the first MoU between Greece and the three institutions, the possibility of restructuring bank governance was introduced in mid-2010 with the founding law of the HFSF, in the event of a recapitalisation involving the Fund. Only where the HFSF's stake in a bank exceeded 90 per cent were the Fund's voting rights in line with other ordinary shares, otherwise HFSF's rights were very limited. This was intended to avoid State interference in the management of the recapitalised banks and to attract private investors.

Under the second EAP, the establishment of the Relationship Framework Agreements (RFAs) was the only – albeit important - reform of bank governance.

The RFAs and their amendments defined the HFSF's role as a shareholder, notably in monitoring the implementation of the banks' restructuring plans and safeguarding banks' operational independence. They also gave the HFSF certain approval and veto rights. In the first semester of 2013, the HFSF law provision on participation in the banks' boards in case of a recapitalisation was activated in the context of the first recapitalisation of the four systemic banks. This was the first case of an explicit change to the governance of a bank stemming from the programme policies.

Evaluations conducted by the IMF and ECA concluded that little was done during the first two EAPs to evaluate and restructure the governing bodies of the Greek banks. According to the IMF, this may have negatively affected banks' ability to attract capital and confront asset quality problems (e.g. rising NPLs). On the other hand, some of the stakeholders interviewed noted that the limited role of the HFSF in the governing bodies of the banks was a result of the relevant provisions in its statute, whereby the HFSF was intended as a backstop against nationalisation.

The most important changes to the management of the Greek banks came at the beginning of the third EAP, through the implementation of the HFSF's review of the boards and committees of the four systemic banks, with newly established and strict criteria (so called 'fit-and-proper' rules). There has been a broad consensus on the relevance of the 'fit-and-proper' criteria.

Regarding the HFSF's role in the governance of the banking sector, since its foundation, its mandate focused *de facto* on maintaining the capital adequacy of banks rather than participating actively in their governance. It is generally agreed that the Fund's limited active involvement in the management of recapitalised banks through their voting-veto rights was the right decision. However, most participants in the Delphi survey believe that the Fund should have been more active in steering the restructuring effort of the systemic banks, either through the RFAs or their amendments.

HFSF governance was modified at the beginning of the second EAP with the introduction of the two-tier structure (General Council - Executive Board). This type of management structure was a new in the context of management practices in Greece, including the banking sector. Its introduction was motivated by the need to reduce the risk of political interference in HFSF functioning. The introduction of the Selection Panel into the HFSF's structure during the third EAP was embraced for the same reason (some interviewees, the ECA, European Commission), as it enhanced independence from the Greek authorities.

The competences of the Fund significantly broadened with the third EAP. In addition to evaluation of the governing bodies of recapitalised banks, the Fund could participate in banks' resolution processes and support them to deal with NPLs. The study considers that the assignment of these competences indicates the intention of the third EAP to strengthen the role of the HFSF in addressing these issues, rather than assigning more competences to other authorities, such as the BoG.

The most impactful banking governance reform introduced in the course of the three EAPs was the review of their governing bodies in 2016, with the 'fit-and-proper' criteria. Through this reform, the HFSF effected the strongest improvement to the effectiveness of banks' management. The respective effects of its participation as a shareholder in their governing bodies were much more moderate.

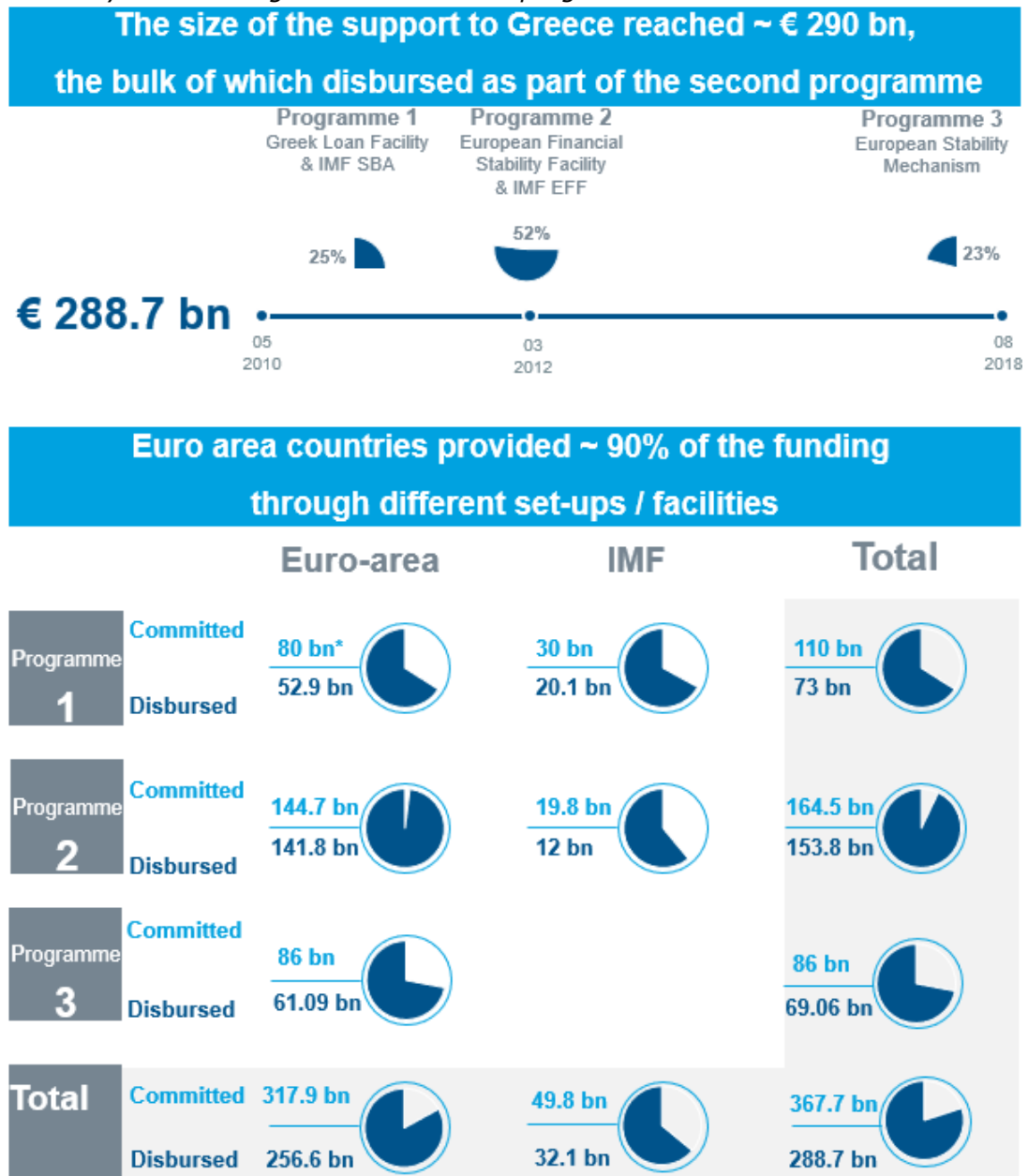
1 Introduction

1.1 Context, scope and purpose of the study

Three Economic Adjustment Programmes (EAPs) were implemented in Greece over the period 2010-2018. The three programmes consisted of providing loans to Greece in light of the financial difficulties it was facing, conditionally on the implementation of policy measures. The basic underlying implicit ideas behind the programmes were: (i) to avoid the default of a Euro-Area member in light of the perceived contagion risks to other euro-area countries and systemic risks to the financial system; and (ii) to temporarily finance budgetary deficits, in the absence of access to capital markets, with strict limits that decline over time, and until a return to a healthier public finance situation could be achieved.

Over the period from May 2010 to August 2018, a total of EUR 288.7 billion were disbursed to Greece at favourable conditions approximately 90 per cent of which coming from the Euro-Area under various pool of funds. Note that different pools of funds had to be used since in 2009-early 2010, there was no EU-level facility which would allow to provide support to members of the Euro Area. Therefore, following the Greek Loan Facility, specific macrofinancial stability (MFS) instruments for euro area countries were set up, as interim arrangements (European Financial Stability Facility, European Financial Stabilisation Mechanism), before the permanent European Stability Mechanism (ESM) could be established. All, except the European Financial Stabilisation Mechanism (EFSM), have been created outside of the EU budget.

Figure 1.1 Key facts and figures on the Greek programmes



Notes: The commitments coming from the GLF decreased to € 77.3 bn when Slovakia decided not to participate in the GLF and when Ireland and Portugal stepped down from the facility as they became programme countries themselves.

The numbers for the commitments under the second programme need to be verified, making sure the resources rolled over from the first programme are consistently treated for both the Euro-area and the IMF.

Source: ICF based on websites of the Council of the European Union, the ESM and DG ECFIN

All programmes had the same objectives of helping to correct unsustainable imbalances and stabilise the financial sector on the short-term and restore the growth prospects and the country's capacity to finance itself fully on the financial markets (fiscal sustainability) in the medium and long run.

To achieve these objectives, a set of conditions were agreed primarily with the European Commission (EC) in the programme's respective Memoranda of Understanding on Specific Economic Policy Conditionality (MoU) and served as benchmarks for assessing policy performance as part of the quarterly reviews. In that context, financial sector reforms under the first EAP focused on largely ensuring sufficient liquidity. Yet, given the

deterioration of the situation in the sector, including solvency risks, financial sector reforms gained more prominence under subsequent two EAPs with larger financial envelopes assigned to financial sector specifically, and more extensive conditionality.

The study focused on analysing the characteristics and developments of the financial sector in Greece over the period 2010-2018 in the light of the objectives and the policies implemented during this period. It covered all three adjustment programmes and all aspects of the programmes with relevance for the financial sector reforms in Greece during this period, in both design and implementation.

The study answered the following questions:

- Question 1: To what extent did the programme analyse appropriately the banking sector risks existing before the 1st programme (including those related to banks' governance, business model, ownership structure, credit, provisioning and investment policies, asset and liability structure), with the information at hand at the time and given the international financial markets context?
- Question 2: What were the main reasons behind the acute liquidity needs of the Greek banking sector throughout the entire three Programmes? How successful were the measures taken in maintaining liquidity, restoring confidence (investor, depositor, interbank), and protecting financial stability?
- Question 3a: What were the main reasons for the significant capital losses of Greek banks? What was the impact of the Private Sector Involvement (PSI) on the Greek financial sector and banks in particular?
- Question 3b: How effective were the measures taken under the programme to stabilise the sector and the individual banks (e.g. recapitalisations, bank resolutions) and restore adequate capitalisation?
- Question 4a: What were the most important reasons behind the large and persistent increase in NPLs in Greece?
- Question 4b: To what extent were programme policies adequate in limiting the initial build-up of the NPL portfolio, given the underlying conditions? Subsequently, were programme policies adequate in facilitating effective NPL resolution and reduction?
- Study question 5a: To what extent were programme policies adequate to improve the governance of Greek banks?
- Study question 5b: To what extent has the Hellenic Financial Stability Fund (HFSF) played an effective role in this regard?

1.2 Structure of this Report

The remainder of this Report is structured as follows:

- Section 2 provides a synopsis of the Greek banking sector prior and at the outset of the financial and sovereign crisis;
- Section 3 provides an analysis and main findings;
- Section 4 provides conclusions.

The main report is supported by the following annexes:

- Annex 1: Methodological approach for data collection and analysis along with the relevant limitations;
- Annex 2: List of completed interviews;
- Annex 3: List of reviewed documentation;
- Annex 4: Summary of desk review on diagnostic work conducted by the BoG, EC, ECB and the IMF.

2 Greek banking sector prior to and at the outset of the crisis

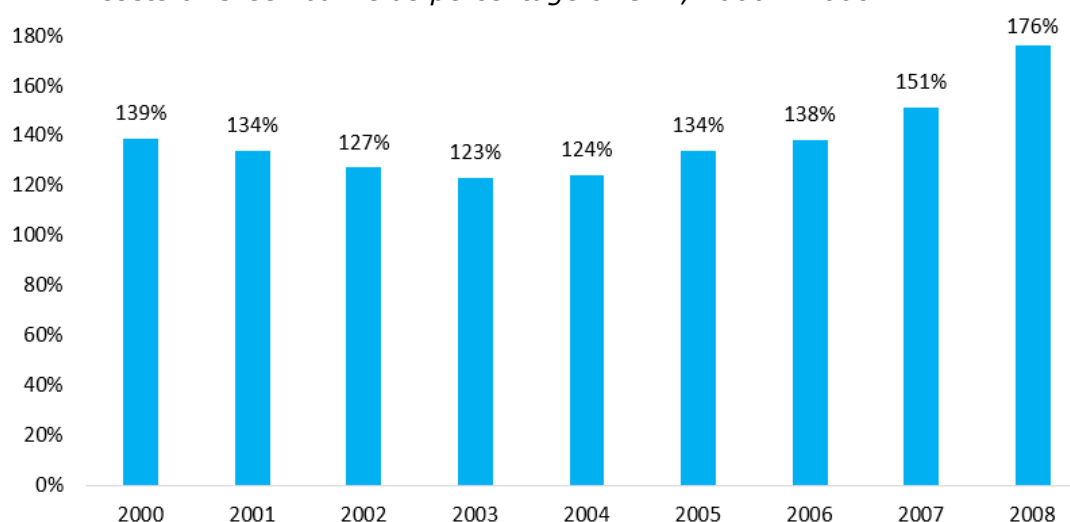
The development of the Greek financial sector, before the domestic fiscal crisis, can be separated into three distinct periods. The first period, 1980-1995, is characterized by significant distortions due to intense government intervention. Indicatively, in all Greek banks the major shareholder was the Hellenic Republic. In addition, there was administrative setting of deposit and lending interest rates as well as quantitative restrictions regarding the disposal of banks' funding. However, the necessity for the gradual harmonization of national laws with the Second Banking Directive until 1992, as well as the decision to liberalize capital movement among EU Member States, have resulted in a drastic reduction of state's intervention. As of the beginning of 1990s an extensive reorganization of the Greek banking system took place through a significant number of privatizations, mergers and acquisitions and through the expansion of Greek banks' network in Southeastern Europe.

During 1996-2000, with the prospect of integration in the common currency union (euro), Greek banks had largely adapted to new, more competitive market conditions, providing a wide range of financial products and services. The growth of their business was accompanied by a significant increase in their profitability largely based on net interest income and fees from ordinary banking activities.

During 2001-2008, the expansion of the Greek banking system continued, as a result of new mergers, acquisitions and the entry of foreign banks in the Greek market. Such expansion, which had actually begun since 1998, is clearly evident from the fact that total loans more than tripled between 1998 and 2008 (from EUR 80.4 to EUR 270.3 bln), according to Bank of Greece data. In more detail, while loans to General Government dropped by 11.3 per cent (from EUR 39.5 bln to EUR 35.1 bln), loans to firms increased by almost four times (from EUR 31.8 bln to EUR 123.8 bln). However, the most impressive increase over the same period was observed in household loans (12.2 times), which reached EUR 111.5 bln in 2008 from only EUR 9.2 bln in 1998. Most of these loans (66.8 per cent on average) were mortgage loans. Thus, the above credit expansion mainly concerned businesses and mortgage loans.

In relation to some basic metrics of the Greek financial sector during the first decade of Euro adoption, the ratio of assets to Gross Domestic Product (GDP) initially dropped from 1.39 in 2000 to 1.23 in 2003, due to the greater increase of Greek GDP than the increase in banks' total assets. However, from 2004 onwards, the ratio increased from 1.24 to 1.76 in 2008 (1.1.1.1 Figure 2.1) as a result of the greater increase in banks' total assets (+77.2 per cent, from EUR 240.6 bln to EUR 426.3 bln) than the increase in Greek GDP (+24.9 per cent, from EUR 193.7 bln to EUR 242 bln).

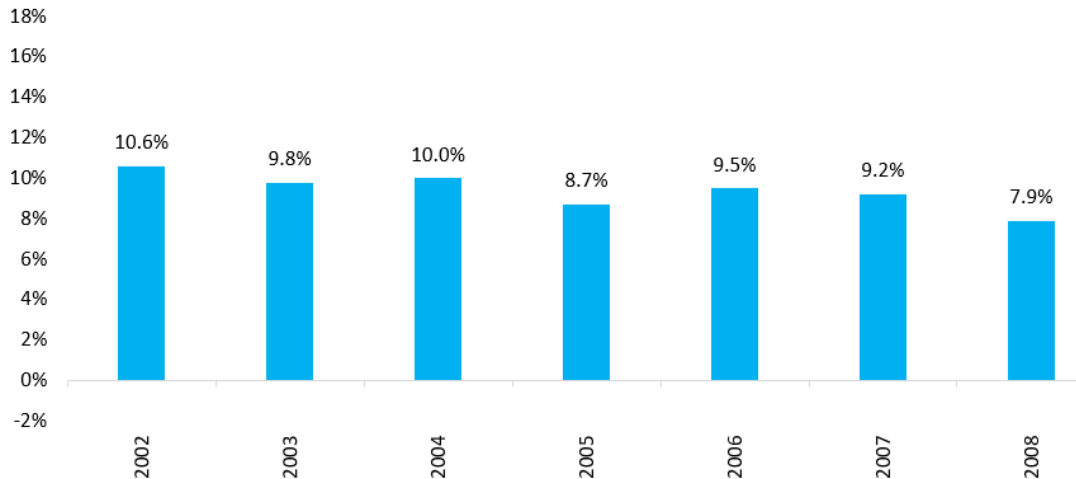
Figure 2.1 Assets of Greek banks as percentage of GDP, 2000 – 2008



Source: BoG and IMF

With respect to capital adequacy of Greek banks, the Core Tier 1 ratio during period 2002-2004 fluctuated around 9.7 per cent. However, after 2004 it dropped slightly to 8.7 per cent, next year (2006) increase to 9.5 per cent, and in 2007 and 2008 drops to 9.2 per cent and 7.9 per cent, respectively (Figure 2.2).

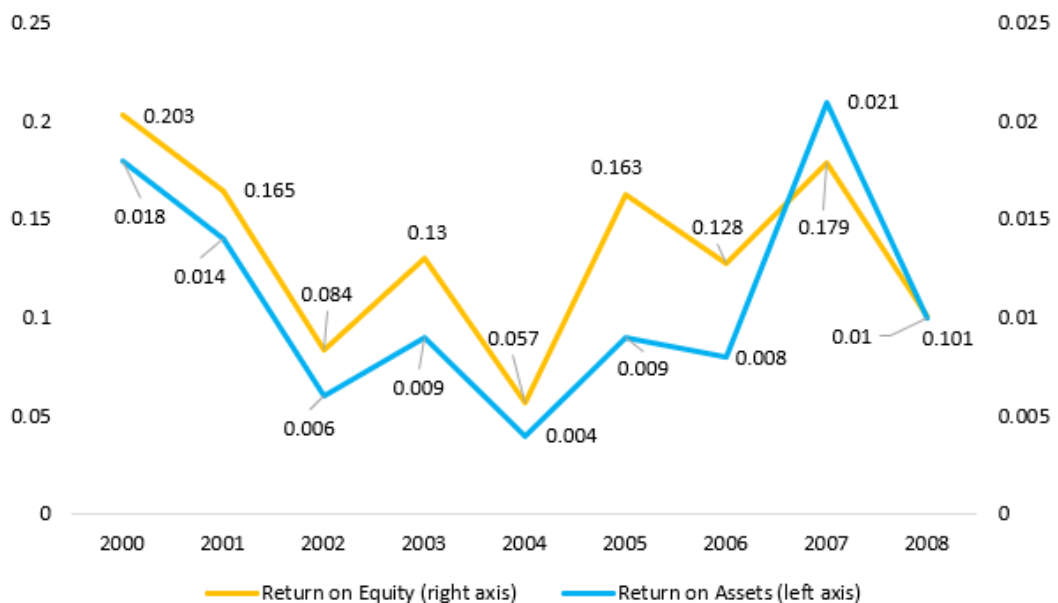
Figure 2.2 Core Tier 1 ratio of Greek banks, 2002 – 2008



Source: BoG

As far as the return on assets is concerned, it followed a downward trend during period 2000-2004, from 20.3 per cent to 5.7 per cent, but then increased to 17.9 per cent in 2007 to fall to 10.1 per cent in 2008. Similar is the picture for the return on equity index. A downward trend observed during period 2000-2004 with the reduction from 1.8 per cent to 0.4 per cent, was followed by an upward trend during period 2005-2007 (from 0.9 per cent to 2.1 per cent), and contraction to 1 per cent in 2008 (Figure 2.3).

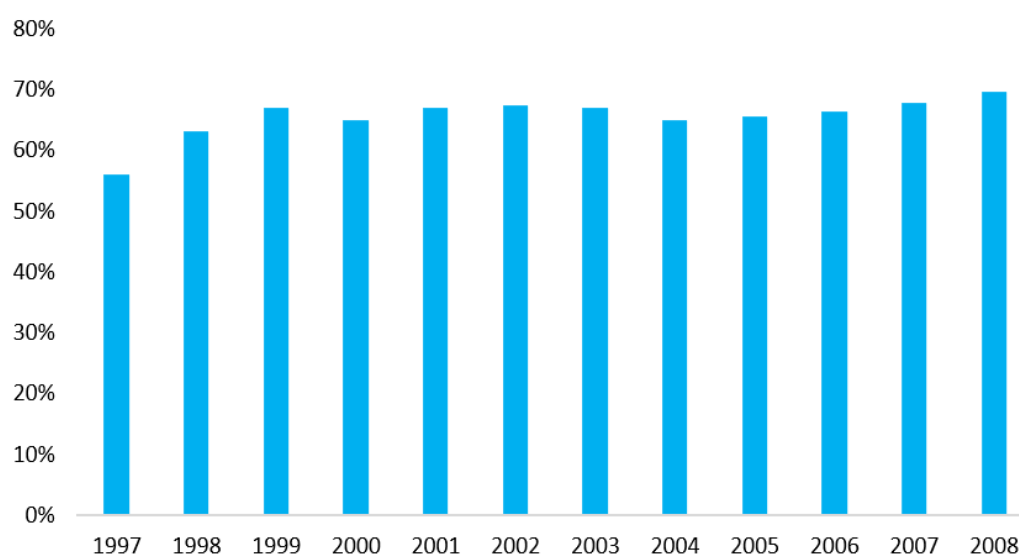
Figure 2.3 Return on Assets and Return on Equity of Greek banks, 2000 – 2008



Source: BoG

With respect to asset concentration of the five largest banks in Greece, it was below 60 per cent until 1998. From then on, the concentration ratio hovered around 65 per cent and eventually reached 70 per cent in 2008. The Greek banking system was therefore highly concentrated at the start of the crisis (Figure 2.4).

Figure 2.4 Assets concentration ratio of five largest banks, 1996 – 2009



Source: ECB

If one compares the ratios of Greek banking system of year 2008 with those of other European countries that have implemented a fiscal adjustment program (Ireland, Portugal, Spain) or took fiscal measures (Italy), it can be seen from the next table that although somewhat lower, Greek banks had still fairly similar Capital Adequacy Ratio compared with banks from these countries and with the EU average, while the Return on Equity (RoE) was second highest after Spain. In addition, relative size of the Greek banking system was not as big as those of Ireland, Portugal, Spain and Italy even though its concentration ratio was already on the higher end, also compared to the EU average.

Table 2.1 Greek banking sector in the international context - selected indicators as of end-2008

Banks	Total assets of banks as % of GDP	Market share of the five largest banks	Capital Adequacy Ratio (CAR)	Return on Equity (RoE)
Greek	192.1	69.6	10.0	12.4
Irish	923.3	50.3	12.1	1.3
Portuguese	269.5	69.1	9.4	5.6
Spanish	305.4	42.4	11.3	12.6
Italian	226.2	31.2	10.4	4.9
EU average	333.5	59.5	12.5	7.6

Source: WB Global Financial Development Database, BoG, EC

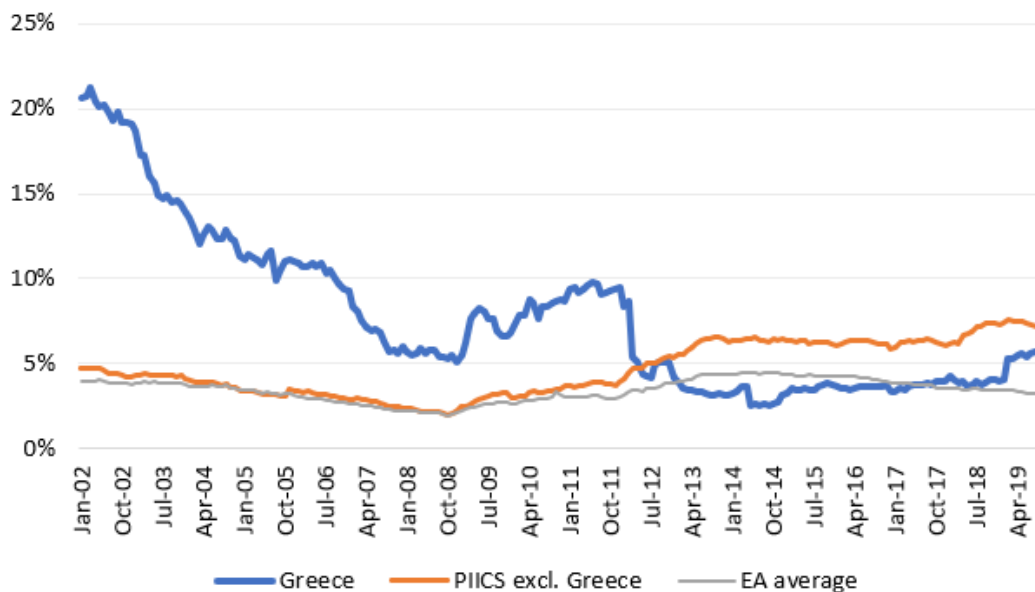
Overall, the Greek banks were often seen by a number of stakeholders as generally sound (also as a result of its limited exposure to toxic financial instruments) compare to some other European peers, and were not considered as a source of major concern during the years prior to the Greek sovereign debt crisis. Banking system's indicators related to leverage, liquidity, profitability and capital adequacy fared not far from average practice among stronger EU peers and Greek banks could also count on the liquidity support from the Bank of Greece (BoG) and the European Central Bank (ECB), subject to the availability of eligible collateral².

² Siokis, F. 2019. The Sword of Democles (Part I): the precariousness of the Greek banking system during the great sovereign debt crisis. Available at:

Nonetheless, the financial system was exposed to a series of long-standing risks, not least of which related to banks' high exposure to domestic sovereign assets, loose credit conditions over a prolonged time period and reported political interference in corporate governance, particularly among state owned banks. Among the main underlying vulnerabilities of the Greek banks in the pre-crisis period compared to their peers, one may highlight the following stylized facts.

- Persistently high "home bias" through the sovereign-banking nexus. In particular, banks' holdings of Greek Government Bonds (GGBs) increased during 2008-2009, exceeding 8 percent of their total assets, compared to Euro Area average below 4 percent during the respective period (Figure 2.5);
- Significant boom in private sector credit since euro entry, which increased banks' market exposure to sudden deteriorations of the macroeconomic environment. It is noteworthy that the average growth rate of bank loans to private sector exceeded 17 percent per annum during Greece's first Euro membership decade 2001-2009 (Figure 2.6);
- Hidden risks related to Non-Performing Loans (NPLs). Although NPL ratio stood at 5.7 per cent by the end-2008, it was already one of the highest in the EU at that time and the propensity of the whole loan portfolios held by Greek banks to underperform was generally much higher (Figure 2.7);
- Relative underdevelopment of capital markets, which restricted domestic portfolio diversification options (Figure 2.8);
- Increasing liquidity risk. Banks faced a gradual reduction of wholesale funding options following the Global Financial Crisis and increasing reliance on short-term ECB repos financing (IMF Article IV report on Greece, August 2009);
- Ineffective regulatory framework, particularly in relation to bankruptcy and debt restructuring procedures, both for firms and households, and recovery of collateral;
- Significant exposure in South Eastern European economies, at around 203 percent of equity (IMF Article IV report on Greece, August 2009).

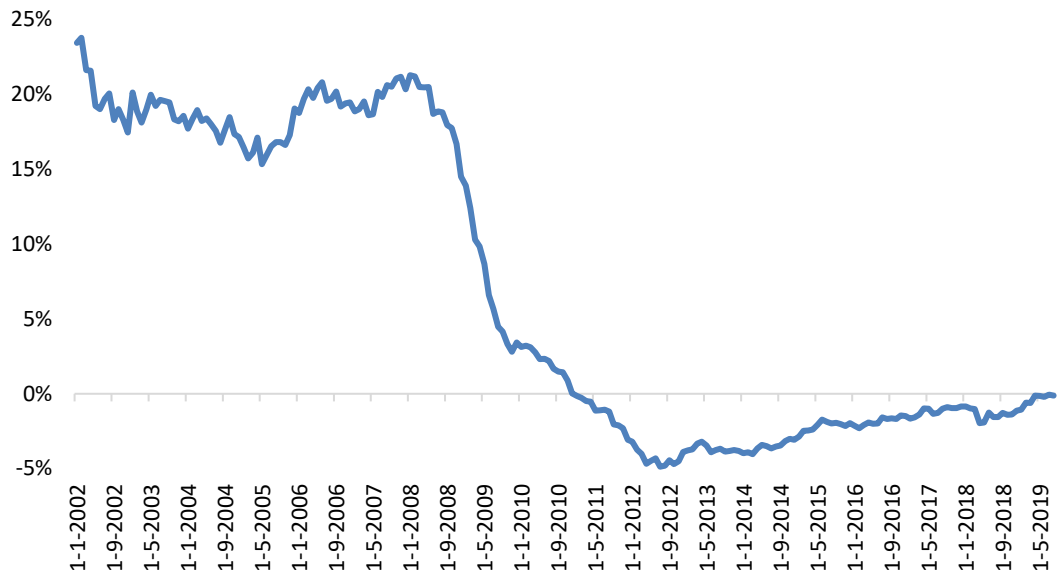
Figure 2.5 Banks' holdings of domestic government bonds, in % of total bank assets



Source: ECB, Note: PIICS includes Portugal, Italy, Ireland, Cyprus and Spain.

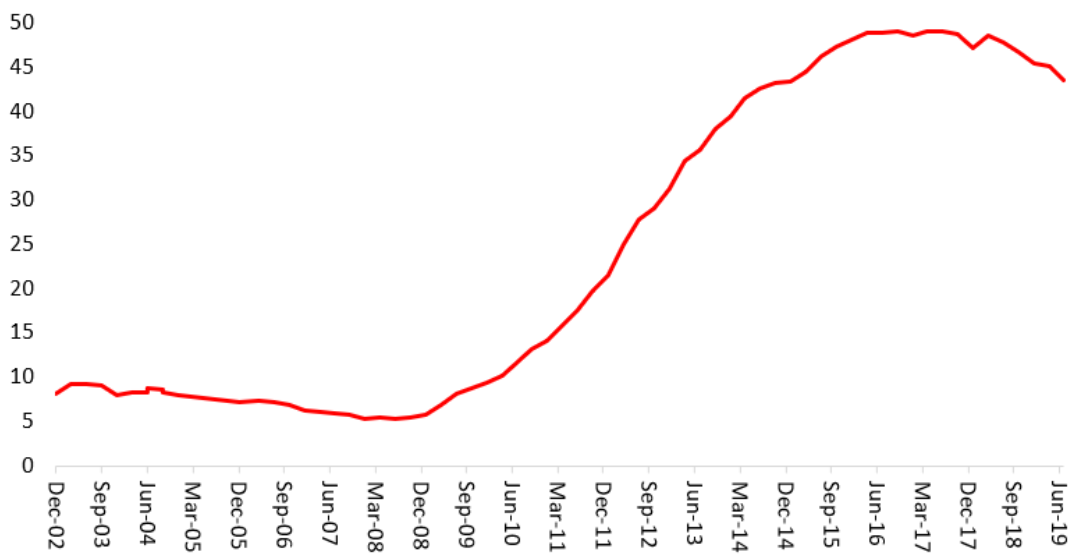
<https://esg.gc.cuny.edu/2019/02/19/the-sword-of-damocles-part-1-the-precariousness-of-the-greek-banking-system-during-the-great-sovereign-debt-crisis/>

Figure 2.6 Greece: Annual growth rate of bank loans to private sector



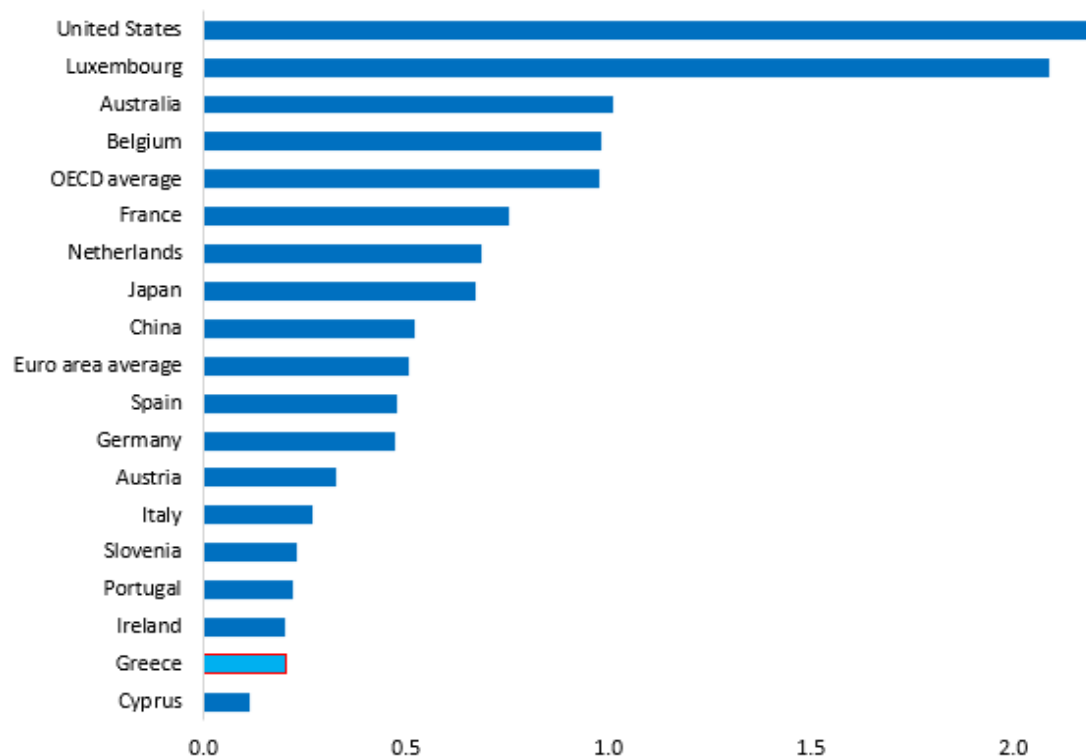
Source: BoG

Figure 2.7 Non-Performing Loans, December 2002 – June 2019



Source: BoG

Figure 2.8 Financial structure across countries, 2010 (Stock market cap / Total bank credit to private sector)



Source: WB

In the context of the aforementioned underlying vulnerabilities of the Greek banking system, the onset of the sovereign debt crisis combined with an abrupt hit on economic activity, hampered banks' access to wholesale funding, triggered a sudden reversal of credit growth, coupled with an accelerating increase of NPLs. Increasing public debt, coupled with fiscal and current account deficits raised concerns about the sustainability of Greek public finances triggering quickly sharp increases in bonds yields, downgrades from credit rating agencies and eventual exclusion from the international capital markets³, firstly affecting the sovereign but quickly spreading over to the financial intermediaries as well, particularly given their growing exposure to domestic government debt. The spill over effects from the sovereign crisis to the banking sector attracted the attention of international creditors, who identified the need for financial sector reforms attached with program conditionality. Hence, financial sector reforms became one of the three pillars of program reform areas, complementary to fiscal and structural areas.

3 Main findings

This section presents the background and the detailed findings from the study, separately for each of the study question. Succinct summary of all the findings is in turn outlined in Section 4.

3.1 Diagnosis of the financial sector at the outset of the crisis

3.1.1 Analysis of banking sector risks and vulnerabilities

The following section addresses study question 1.

³ World Bank, 2016. Bank Resolution and 'Bail-In' in the EU: Selected Case studies pre and post BRRD. Available at: <http://documents.worldbank.org/curated/en/731351485375133455/pdf/112265-REVISED-PUBLIC-FinSAC-BRRD-CaseStudies.pdf>

Question 1: *To what extent did the programme appropriately analyse the banking sector risks existing before the first programme (including those related to banks' governance, business model, ownership structure, credit, provisioning and investment policies, asset and liability structure), with the information to hand at the time and given the international financial markets context?*

In order to respond to this study question, this section examines the following aspects:

- The state of the Greek banking sector at the outset of the crisis;
- Whether the diagnostic work undertaken by the BoG, European Commission, ECB and the IMF appropriately analysed the banking sector risks existing before the first programme;
- Whether there were any major constraints on the analysis of the risks in the Greek banking sector prior to the first programme.

3.1.1.1 State of the Greek banking sector at the outset of the crisis

Prior to the outbreak of the sovereign crisis, the Greek banking sector was considered to have sound fundamentals (see discussion under Section **Error! Reference source not found.**).

Overall, the Greek banking sector was seen as conservative and resilient, with the last systemic banking crisis as far distant as 1932. Indeed the 2007-2009 global financial crisis had a relatively limited direct impact on the banking sector in Greece, as the Greek banks were less exposed to 'toxic' financial instruments and traditionally did not rely heavily on wholesale funding⁴.

The banking sector, however, was not entirely immune to the global financial crisis, which served to expose some of the risks and vulnerabilities that had built up over time. For example, the IMF's August 2009 Article IV Consultation Report highlighted the growing pressures on the Greek banks' balance sheets and income arising from their exposure to South Eastern European (SEE) countries, slowdown in domestic credit growth and rising cost of wholesale funding. Stress tests conducted jointly by BoG and IMF staff concluded that the banking system had enough buffers to weather the expected downturn, although the report warned that *'should the downturn be more prolonged and deeper than currently projected, and financial tightening return, domestic credit quality may deteriorate further than envisaged, and portfolios in South Eastern Europe (SEE) could face additional pressures. These risks need to be managed cautiously and the authorities should remain prepared to act if systemic pressures arise.'*

Notwithstanding those issues, the literature (including official documents) broadly acknowledges that the Greek crisis did not originate in the banking sector. Rather, unlike some of the other Euro-area crisis countries (e.g. Spain, Ireland), the protracted recession (GDP shrank by 25 per cent between 2010 and 2013) and sovereign debt crisis spilled over to the banking system in Greece, causing acute liquidity pressures and creating a solvency crisis. The literature⁵ identifies various issues and weaknesses in the Greek banking sector that might have made it vulnerable to spillover from the sovereign crisis (see section 2 discussion). These include:

- Greek banks' excessive exposure to sovereign risk;

⁴ Boudghene, Y., Buder, M., Dellidou, Z., Galand, C., Iftinchi, V., Lienemeyer, M., Malamataris, C., and Malvolti, D., 2011. State aid control in a stability programme country: the case of Greece. *Competition Policy Newsletter*, 2011.

⁵ For example, ECA, 2017. Special Report on the Commission's intervention in the Greek financial crisis; IMF-IEO, 2016. The IMF's role in the Euro area crisis: financial sector aspects.

- Issues related to governance and ownership of Greek banks are reported to have contributed to the high number of NPLs during the crisis (alongside the recession). The literature highlights problematic corporate governance practices, with poor management, blurred demarcation line between the state and the state-owned banks, and inadequate assessment of credit risk. For example, it is reported that loans were granted in the pre-crisis period to political parties and to corporations with low creditworthiness but privileged relationships with banks;
- Significant boom in private sector credit since Euro entry, which increased banks' market exposure to sudden deteriorations of the macroeconomic environment. A sign of lax credit origination practices by Greek banks;
- Weakening equity base - in March 2009, Greek banks' equity totalled EUR 28.9 bln – no more than 6.2 per cent of their balance sheet (EUR 473.1 bln), while their capital adequacy at the end of 2008 was lower than most EU banks as a percentage of risk-weighted assets. Loan loss reserves, although not below the EU average as a percentage of NPLs at the time, amounted to only EUR 7.2 bln⁶, much less than the amount necessary to cover the actual risk from the rapid deterioration of the asset quality of the loan book that was about to follow. Reserves amounted to only 3 per cent of the EUR 217.1 bln in loans granted, whereas the ratio of NPLs was 6 per cent. In fact, in its interim Monetary Policy report in November 2008, BoG recommended that Greek banks should increase their loan provisions;
- Inadequate insolvency framework for dealing with household and corporate bankruptcy;
- Significant exposure of some Greek banks in SEE economies;
- Increasing liquidity risk - banks faced a gradual reduction of wholesale funding options in the wake of the global financial crisis and increasing reliance on short-term ECB repo financing;
- Payment of oversized dividends to private shareholders - during 2005-2008 (the last year in which the Greek banks distributed dividends), dividend rates ranged from 2.5 per cent to 3.5 per cent, with banks distributing around half of their annual profits. Some commentators argue that this might have contributed to eroding the asset base of the Greek banks⁷;
- Relative underdevelopment of capital markets, which restricted domestic portfolio diversification options.

3.1.1.2 Whether the surveillance work undertaken by the BoG, European Commission, ECB and IMF appropriately analysed the banking sector risks existing before the first programme

The Maastricht criteria - or the excessive deficit procedure – paid little attention to non-fiscal imbalances. Similarly, prior to the financial crisis, little notice was taken of the financial sector in the EU country surveillance⁸.

The financial crisis sent shockwaves through every economy and, in 2011, the European Commission integrated financial sector monitoring as an integral part of the surveillance framework, both in the EAPs and in the European Semester⁹.

⁶ According to 2008 data, Greek banks' cash coverage ratio was 53.5 per cent, 12th highest among the 28 EU Member States.

⁷ Toussaint, E., 2017. Banks are responsible for the crisis in Greece.

⁸ European Commission, 2017. Coping with the international financial crisis at national level in the European Context. Available at: https://ec.europa.eu/info/publications/coping-international-financial-crisis-national-level-european-context_en

⁹ *ibid.*

A review of programming documents, existing evaluations and audits suggests that discussions on the policy options and structural reforms under the first EAP did not start from scratch. The EU Council Decision (on the excessive deficit procedure) and Recommendation (on structural reforms) of 16 February 2010 constituted an important basis and the starting point for programme discussions, especially on fiscal and structural policies. The debate on financial sector issues, however, was less well advanced. Indeed, the ECA noted that¹⁰ *'...the first Greek programme focused primarily on public finances rather than the financial sector'* and it *'... initially comprised only three financial sector conditions that were largely inspired by the IMF's findings for the 2009 Article IV consultation.'*

In terms of diagnostic work, Greece became the subject of greater attention as early as 2009. BoG and the IMF staff started conducting stress tests of Greek banks in the first half of 2009, focusing on credit, cross-border, market and liquidity risks¹¹. The inputs of those tests were then considered in the design of the first EAP. It should be noted that the EU-wide stress-testing of the banks by the ECB/EBA did not begin until 2011¹².

Prior to the first EAP, there was a clear realisation among the institutions that banking supervision would need to be strengthened and this was, indeed, among the first provisions under the first EAP¹³, which brought closer coordination with BoG. This included more frequent (quarterly ones) stress tests, on-site inspections, faster data reporting by BoG, as well as increased staffing to cope with new responsibilities, such as supervision of the insurance sector, which was given to BoG in 2010. At the same time, BoG began also to publish its biannual Financial Stability Reviews (FSR), which offered a more comprehensive analysis of the risks for the Greek banking system than its regular reports.

The European Commission interviewees involved in the initial diagnostics and design of the programme stated that, prior to the first EAP, the institutions used publicly available data. Once the programme began, they also used the supervisory data, e.g. daily reporting on liquidity positions of banks and data on NPLs (from BoG).

Generally, the diagnostics of the risks in the banking sector conducted by the BoG, European Commission, ECB and IMF - including those related to banks' governance, such as business model, ownership structure, credit, provisioning and investment policies, asset and liability structure, and exposure risks - involved a number of channels, some of which are described here.

Firstly, much of the information that fed into the diagnostics of the banking sector prior to the first EAP was collected and analysed as part of regular surveillance work conducted by BoG and the institutions. Secondly, once the decision was taken to initiate the first EAP, some European Commission, ECB and IMF diagnostic work was done on the ground, during the fact-finding missions of institutions' technical teams to Athens that began in January 2010 and continued until April 2010¹⁴ when the proposed financial sector conditionality was finalised. The findings from the latter are generally not publicly available, apart from the insights gathered through the interview program conducted as part of this study, and therefore not covered in a comprehensive way in this analysis.

The study team conducted an in-depth review of the selected surveillance publications from the BoG, European Commission, ECB and the IMF to assess the type of risks and their relative weighting. Although this is not representative for all surveillance work, it

¹⁰ ECA, 2017. Commission's intervention in Greece. Available at: <https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=43184>

¹¹ IMF, 2009. Country Report No. 09/244, August 2009.

¹² ECB, 2013. A macro stress-testing framework for assessing systemic risks in the banking sector. Occasional Paper Series.

¹³ European Commission, 2010. The economic adjustment programme for Greece. Available at: <https://op.europa.eu/en/publication-detail/-/publication/64c89a77-ddc4-46f4-9bb0-18d7e80f6f0c/language-en>

¹⁴ Including direct discussions with the key Greek banks.

nevertheless gives some sense of the understanding and prioritisation of risks by the institutions and BoG at the time. Box 3.1 outlines the publications and sources that were subjected to this in-depth review, while Box 3.2 presents the summary findings of that review. The full analysis is available in Annex 4.

Box 3.1 List of surveillance publications reviewed

Bank of Greece

- Bank of Greece (2011a). Annual Report 2010, April 2011
- Bank of Greece (2011b). Monetary Policy 2010-2011, February 2011
- Bank of Greece (2010a). Monetary Policy Interim Report 2010, October 2010
- Bank of Greece (2010b). Financial Stability Review, July 2010
- Bank of Greece (2010c). Annual Report 2009, April 2010
- Bank of Greece (2010d). Monetary Policy 2009-2010, March 2010
- Bank of Greece (2009a). Interim Financial Stability Review, December 2009
- Bank of Greece (2009b). Monetary Policy Interim Report 2009, October 2009
- Bank of Greece (2009c). Financial Stability Review, June 2009
- Bank of Greece (2009d). Monetary Policy 2008-2009, February 2009

European Commission

- Quarterly report on the Euro-area (QREA) for the period March 2009-June 2010
- Economic Forecasts (EEF) for the period spring 2009-autumn 2010

ECB

- ECB (2010). Financial Stability Review, June 2010
- ECB (2009a). Financial Stability Review, December 2009
- ECB (2009b). Financial Stability Review, June 2009

IMF

- IMF (2010a). Staff report on first review under the stand-by arrangement, September 2010
- IMF (2010b). Staff report on interim review for stand-by arrangement, July 2010
- IMF (2010c). Staff report on request for stand-by arrangement, May 2010
- IMF (2009a). Selected Issues Papers on Greece, August 2009
- IMF (2009b). Article IV Consultation Staff Report for Greece, August 2009

Box 3.2 Summary findings – in-depth review of selected surveillance publications

BoG

Most of the BoG reports prior to and during the initial period of the first EAP were published as part of its regular publication series, i.e. annual reports, monetary policy interim reports (MPIRs) and monetary policy reports (MPRs). In 2009, BoG issued a new publication series, the FSR, which was published twice a year, in June (main report) and December (interim report).

Annual reports, MPIRs and MPRs from the period 2009-2011 paid considerable attention to the issue of rising NPLs, as well as deteriorating liquidity. Risks stemming from the deteriorating fiscal situation were also highlighted (e.g. impact of sovereign downgrades on banks' ratings). Yet, the review found no references to loose credit policy prior to the crisis or issues around corporate governance of Greek banks.

The first two FSRs published in 2009 did not include an explicit warning about the sovereign debt-servicing conditions–banking sector feedback loop. However, the third report (published in 2010) emphasised the fact that international money and capital

markets became inaccessible from end-December 2009 due to increasing concerns about Greece's fiscal prospects - practical evidence that the sovereign-banking nexus was a material issue. The Review also discussed the issues of NPLs, decline in credit supply, corporate governance, risks of activities of Greek banks in emerging European countries, outflow of deposits and decline in house prices.

European Commission

The QREA provided an aggregate analysis of economic developments in the Euro-area during a given quarter, without too much country-specific detail. Generally, these reports did not feature specific analysis of Greece's banking sector risks, with related issues mentioned only briefly as part of the broader Euro-area analysis. For example, the March 2009 QREA referred to loose credit policies fueling the rapid rise in property prices observed in Spain, Portugal and Greece, in the context of a discussion on the build-up of current account imbalances within the Euro-area. The QREAs produced in 2010 made no specific mention of Greek banking sector issues, even in the context of the broader Euro-area analysis.

The EEFs were produced three times a year between spring 2009 and autumn 2010. They made references to banking sector liquidity issues and weak credit supply as a risk factor for Greece (the downside risk to economic activity via bank-lending channel) and highlighted the vulnerability inherent in the large increase in lending to households. Again, there was no reference to sovereign risk from high exposure to GGBs, high NPLs or weak corporate governance. The review of EEFs also suggests some underestimation of the situation in Greece in the autumn 2009 EEF. There was some expectation at that (defined as upside risk of the forecast but not baseline scenario) that a gradual improvement in liquidity and capitalisation of Greek banks might contribute to a modest credit expansion in 2010, which of course did not prove to be the case. The autumn 2010 EEF also provided a rather optimistic outlook, anticipating that an improvement in liquidity and capitalisation of Greek banks might help to sustain a modest expansion in credit in 2011, which, in turn, could fuel private consumption and foster investment.

ECB

Despite being published prior to and at the early stages of the first EAP, neither of the ECB's two 2009 FSR reports made any specific references to Greece's particular financial sector risks.

The 2010 FSR referred to Greece-specific risks by describing the onset of the Greek sovereign crisis, noting that *'the main trigger for the market's reappraisal of sovereign risk appeared to be the fiscal woes of Greece and uncertainty surrounding the prospect of agreeing a credible fiscal consolidation plan'*.

IMF

The five IMF country reports for Greece published between 2009 and 2010 offered the most comprehensive analysis of underlying risks in the Greek financial sector. They stressed the liquidity risks (including as a result of sovereign-banking loop) and discussed (extensively) the issues around NPLs. Unlike other organisations' publications, the IMF country reports referred explicitly to solvency risks. Other risks discussed included: high exposure of Greek banks to some emerging European countries; confidence erosion (outflow of deposits); market risks (including volatilities on equity, bonds and forex); and (briefly) governance issues in Greek banks.

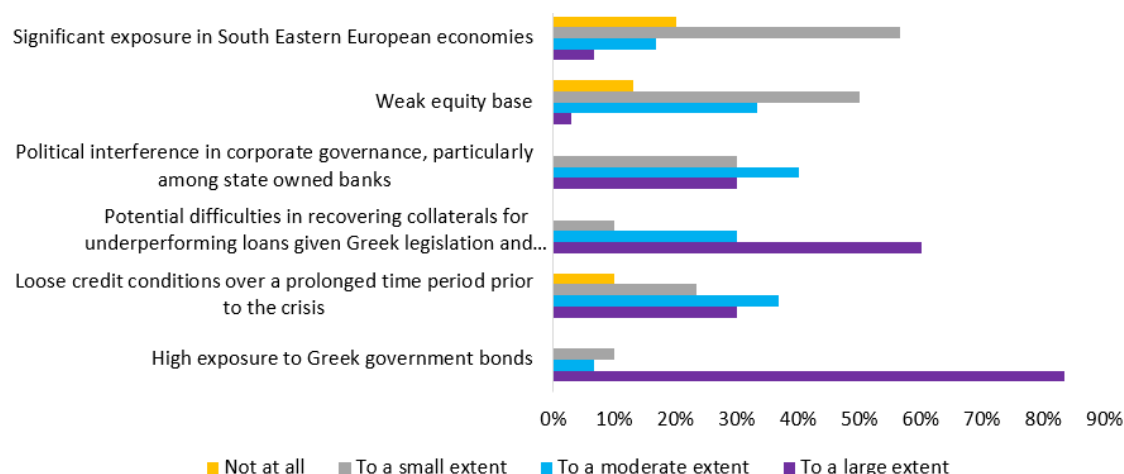
Overall, the review of the selected BoG, European Commission and ECB publications shows that the coverage of the comprehensive set of risks was not comprehensive enough, with the IMF offering the most comprehensive analysis of underlying risks. For instance, even though the European Commission's QREAs and EEFs did not delve into sovereign risk, it featured fairly extensively in the July 2010 document underpinning the first EAP that

offered a synopsis of the Commission's diagnostics¹⁵. It is fair to say that it was liquidity issues (and not solvency) that were most pressing at the initial stage of the crisis, thus they rightly received most attention. Yet, somehow overly optimistic projections of credit supply provided in the autumn 2009 and spring 2010 EEFs suggest that the gravity of the situation in the Greek banking sector was somewhat underestimated. The lack of BoG's explicit acknowledgment of the risks related to the pre-crisis loose credit policies and issues with the corporate governance of Greek banks also demonstrates some gaps.

It is therefore worth exploring whether there were any strong indications/signs – from the information at the time and in the absence of a European supervisory authority - that the first programme should have envisaged straight from the start a more in-depth assessment of the financial health of the core Greek banks, similar to the BlackRock Asset Quality Review (AQR) in 2013 (see Section 3.3). In the view of most of the staff interviewed from the BoG and the European Commission, if executed earlier, the BlackRock AQR would have had very limited added value, due to: (i) negligible visibility on the size and potential impact of a PSI in 2010/ early 2011; and (ii) inconsistency of macroeconomic data (including all key drivers of credit losses), which was even greater at the early stage of the crisis. The first EAP did foresee some potential deterioration of banks' asset quality by endowing the Financial Stability Fund with EUR 10 bln.

In retrospect, of all of the risks in the Greek banking sector, it was the sovereign-banking feedback loop that had the most severe implications (see Section 3.3). This raises the question of whether it was adequately identified and diagnosed, bearing in mind the constraints on policy-making during the crisis, including the inherent difficulty of forward-looking diagnostics and forecasts. The literature and the interview programme clearly point to the sovereign-banking feedback loop as the central issue in the Greek context, and this view is shared by Delphi survey respondents, who also view it as the key factor that increased the vulnerability of Greek banks (1.1.1.1Figure 3.1).

Figure 3.1 Delphi survey – to what extent did the following factors contribute to making the Greek banks vulnerable to the sovereign debt crisis and subsequent developments?



Source: Delphi survey, N=30

An IMF evaluation¹⁶ concluded that the IMF was the first among public authorities and academics to understand and acknowledge the role of the bank–sovereign vicious circle as the central driver of the Greek crisis. The same evaluation states that 'the bank–sovereign vicious circle became a major feature of the IMF's interpretation of the Euro area crisis in

¹⁵ European Commission, July 2010. The Economic Adjustment Program. Available at: <https://op.europa.eu/en/publication-detail/-/publication/64c89a77-ddc4-46f4-9bb0-18d7e80f6f0c/language-en>

¹⁶ IMF-IEO, 2016. The IMF's role in the Euro area crisis: financial sector aspects.

the fall of 2011, well ahead of European authorities' interpretations', although it should be noted that based on the study team information, no Commission staff were interviewed for that evolution.

The IMF assessment was disputed by selected interviewees, including some of those from the European Commission and BoG. In essence, they agreed that there was late recognition of the full magnitude of this risk, partly due to an underestimation of the impact of fiscal consolidation measures on the whole economy that then trickled down to the banking system. However, they observed that key issues such as high exposure of banks to GGBs and implications of the deteriorating fiscal stance and sovereign downgrades were straightforward and well understood. Given that there was no history of sovereign default and the general perception of risk-free debt of Eurozone countries, almost all key stakeholders failed to foresee the full scale of the damage caused to the Greek banks. The interviewee from Moody's broadly concurred with that assessment in relation to the initial stage of the crisis: *'IMF reports were showing some concerns. But it was almost boiler-plate IMF language. So before the crisis hit, nobody's lights were flashing. The information shock was quite severe.'* According to BoG: *'...there was no realisation of the severity of the situation and the risk of the global banking crisis turning into a sovereign debt crisis for countries with high deficits and debts such as Greece. On the contrary, the international crisis, galloping at rapid rates all over the world, was treated as a distant phenomenon, irrelevant for Greece'¹⁷.*

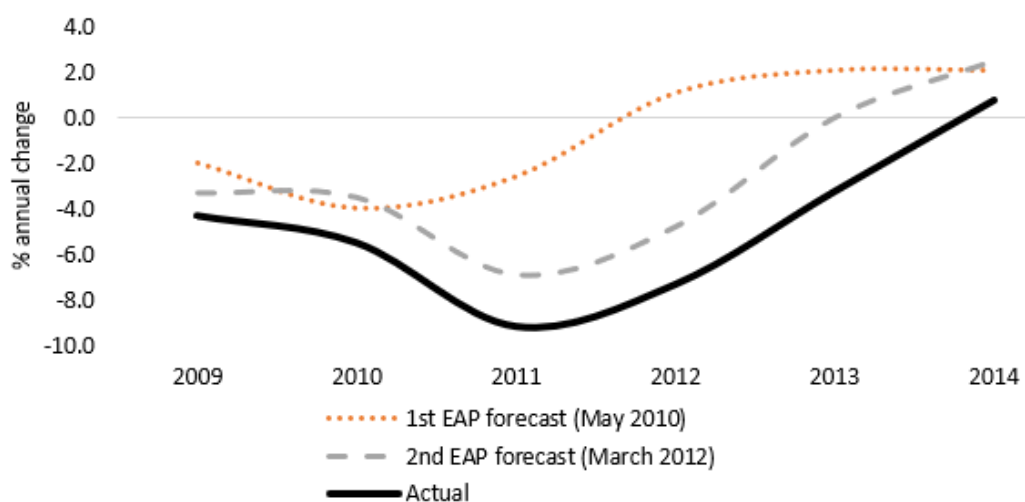
More generally, the high exposure to GGBs was broadly acknowledged as a vulnerability factor ex post, but the discussions at that time had less focus on the reasons behind such higher exposure ex ante.

Another factor that weighed against an accurate assessment of the risk stemming from the sovereign-banking feedback loop was flawed macro projections for the whole Greek economy. From October 2009, uncertainties and fears around the budgetary situation of Greece were fuelled, as the incoming government revised estimates of the 2009 deficit from 6.7 to 12.7 per cent of GDP. Indicatively, the institutions' macroeconomic forecasts at the time of launch of the first and second EAP largely underestimated the size of forthcoming negative growth by an average of 4.6 ppts and 2.8 ppts of GDP per annum respectively, over the 5-year medium term period (Figure 3.2). It should be noted that, historical data available at the time of the forecasts also underestimated the size of actual recession which was already underway, by an average of 2.8 ppts and 2.1 ppts of GDP respectively over a 2-year period preceding the launch of each EAP¹⁸. Conversely, forecasts at the time of launch of the third EAP underestimated the pace and size of economic recovery.

¹⁷ Bank of Greece, 2013. The Chronicles of the Great Crisis. The Bank of Greece: 2008-2013. Available at: <https://www.bankofgreece.gr/Publications/Selections%20from%20The%20Chronicle%20of%20the%20great%20crisis%20-%20the%20Bank%20of%20Greece%202008-2013.pdf>

¹⁸ The actual size of the recession was revealed by statistical revisions made by the Hellenic Statistical Authority, which were published after the launch of the programmes.

Figure 3.2 Growth forecasts actual GDP during the first and second EAP



Source: DG ECFIN programme documents for first and second EAP forecasts, ELSTAT for revised actual rates as of 2020.

Note: (1) the first EAP forecast in May 2010 was based on recorded real GDP growth rate of +3.0% and -2.0% for the years 2008 and 2009, which was subsequently revised by ELSTAT to -0.3% and -4.3%, respectively. (2) The second EAP forecast in March 2012 was based on recorded real GDP growth rate of -3.3%, -3.5% and -6.9% for the years 2009, 2010 and 2011, which were subsequently revised by ELSTAT to -4.3%, -5.5% and -9.1%, respectively

3.1.1.3 Whether there were any major constraints to the analysis of the risks in the Greek banking sector prior to the first programme

Overall, the study did not find any major constraints to the analysis of the risks in the Greek banking sector prior to the first EAP, notwithstanding the issue of macroeconomic projections discussed above.

While fiscal and national accounts data turned out to be inaccurate, this was not the case for financial data. Key interviewees from the European Commission found pre-programme financial data supplied by the BoG to the three institutions to be in line with data provided by other central banks in the EU. More generally, a vast majority of interviewees, including those from the European Commission, believe that the scope, frequency of data provision and reliability of the available financial data underpinning diagnostics (prior to the first programme) was satisfactory. The study team found that publicly available IMF staff reports did not flag any pre-programme data weaknesses that would have hindered satisfactory IMF surveillance of financial sector developments. However, the Fund's staff noted that the data requirements for programmes are more intensive.

The cooperation between the institutions and the BoG was characterised as adequate by the former ones.

3.2 Liquidity of Greek banks and measures to maintain it

3.2.1 Effectiveness of the measures in maintaining liquidity, restoring confidence (investor, depositor, interbank), and protecting financial stability

The following section addresses study question 2.

Question 2 *What were the main reasons behind the acute liquidity needs of the Greek banking sector throughout the entire three Programmes? How successful were the measures taken in maintaining liquidity, restoring confidence (investor, depositor, interbank), and protecting financial stability?*

In order to respond to this study question, this section examines the following aspects:

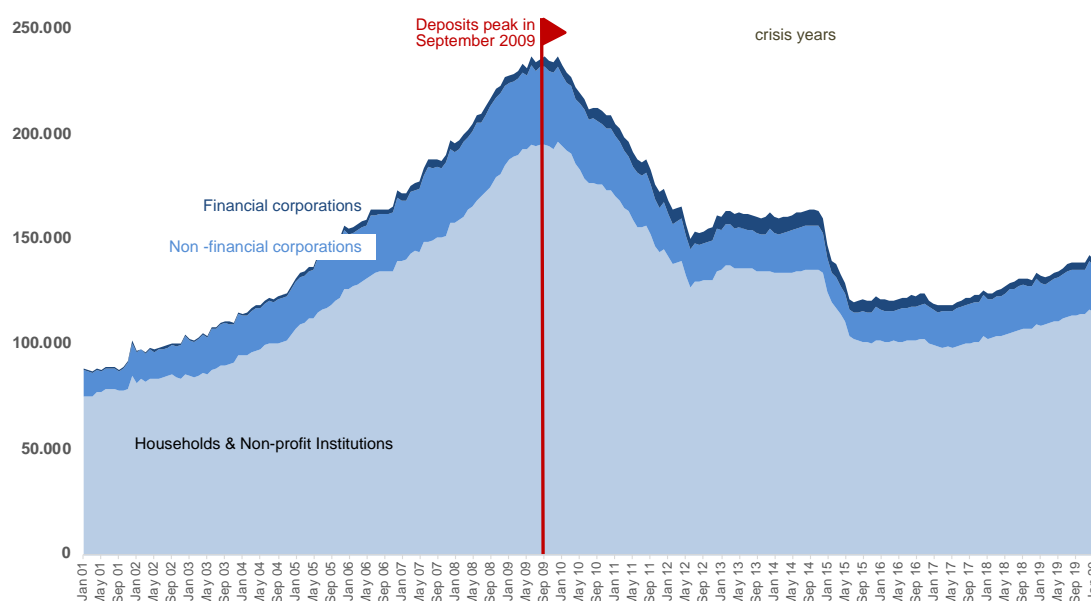
- Main reasons behind the acute liquidity need of Greek banks;
- Effectiveness of the measures taken to maintain liquidity and confidence.

3.2.1.1 Main reasons behind the acute liquidity need of Greek banks

At the end of 2009, Greek banks lost access to international money and capital markets. In October 2009, Greece's incoming socialist government announced that the country's budget deficit was far bigger than previously reported. Revised estimates for 2009 raised the budget deficit from 3.7 per cent to 12.5 per cent of GDP¹⁹. Concerns about the state of the country's public finances triggered a series of sovereign downgrades by rating agencies, and investors started pulling out of Greek bonds. In the general context of the turbulence affecting the debt markets for the Greek government, banks lost market access at the end of 2009^{20,21}.

In parallel, the Greek banks experienced considerable deposit outflows. Private sector deposits (e.g. deposits by households and businesses) with Greek banks had grown strongly during the pre-crisis years, peaking at about EUR 238 bln in September 2009 (Figure 3.3). However, from October 2009, Greek banks experienced a steady outflow of deposits, fuelled by concerns about their deteriorating balance sheets, the solvency of the Greek state, and the increased tax obligations of depositors²².

Figure 3.3 Private sector deposits by sector, EUR millions



Source: Bank of Greece

The loss of access to capital markets and persistent deposit outflows put banks' liquidity under acute pressure. From 2009, successive credit rating downgrades of their own bonds and Greek sovereign debt increased their cost of funding²³, while recurrent deposit flights

¹⁹ Barber, T. (2009). Greece vows action to cut budget deficit, October 2009, Financial Times

²⁰ IMF (2010) Greece Country Report No. 10/111, May 2010, IMF

²¹ Coppola, F. (2015) The way to fix Greece is to fix the banks, 27 July 2015, Financial Times

²² Bank of Greece (2010). Annual Report for the year 2009, p. 160.

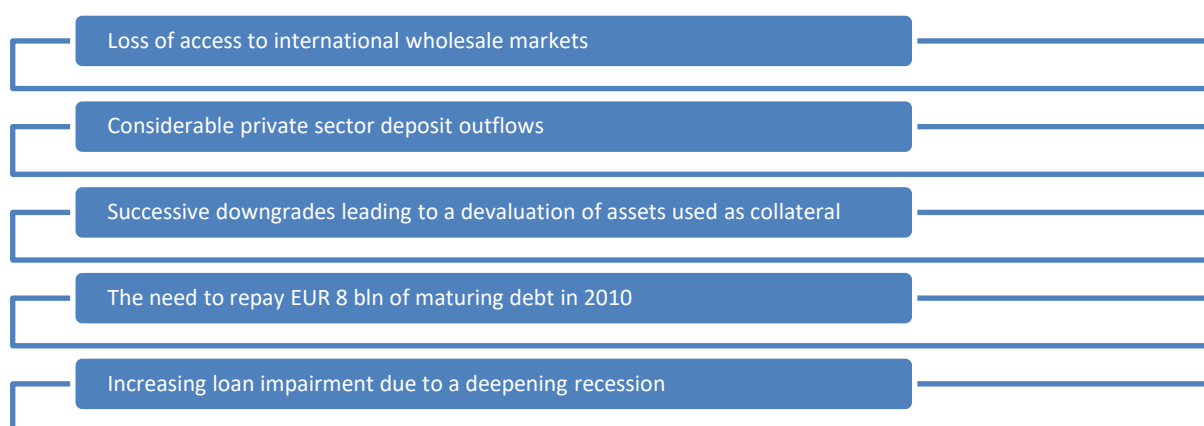
²³ Successive sovereign downgrades also led to a devaluation of assets that had been used as collateral for refinancing from the Eurosystem.

increased their need for external funds. Liquidity needs for Greek banks during 2010 reached a total of EUR 74 bln, stemming from three causes, as follows²⁴:

- EUR 40 bln due to deposit outflows;
- EUR 26 bln due to the need to replace/add collateral whose rating was downgraded (and hence more collateral was needed to maintain access to existing levels of Eurosystem funding);
- EUR 8 bln due to expiring liabilities that had to be rolled over.

Increasing loan impairment (due to a deepening recession), put further pressure on the liquidity position of the Greek banks. Shortage of liquidity forced the Greek banks to further cut their lending to businesses, which created a vicious loop.

Figure 3.4 Factors exerting liquidity pressures on Greek banks



The Greek government guarantees for bank bonds provided some relief. In November 2010, to facilitate access by Greek banks to wholesale markets and to increase repo-eligible collateral, the Greek government released the previously approved EUR 25 bln of guarantees for bank bonds²⁵. This offset the liquidity constraints facing the banks to some extent.

Market confidence plunged in the spring of 2011, amid growing social unrest, a deepening recession and speculations about debt restructuring. Some analysts even suggested that Greece should default and exit the Euro zone²⁶. Consequently, sizeable deposit outflows took place during April – June 2011, fanned by fears of a Grexit (and related concerns

²⁴ Bank of Greece Annual Report 2012

²⁵ IMF Second Review under the Stand by Arrangement, December 2010. The provision of government guarantees for bank bonds was the second (and most extensively used) pillar of a scheme to support the banking sector set up initially in November 2008. The original November 2008 scheme envisaged 3 pillars: a) the State providing capital by acquiring preference shares – budget EUR 5bn, b) Greek government guarantees for bank bonds (GGBs) – budget EUR 15bn and c) support through the issuance of Greek State special purpose securities to credit institutions – budget EUR 8bn. The second pillar was prolonged multiple times (in fact it is still active but practically unused) and the budget of EUR 15bn was increased to EUR 30bn on 12 May 2010, and then again to EUR 55bn (Commission decision of 30 June 2010 in State Aid N 260/2010 "Extension of the Support Measures for the Credit Institutions in Greece") and EUR 85bn (Commission decision of 4 April 2011 in State Aid SA.32767 (2011/N) "Amendment to the Support Measures for the Credit Institutions in Greece") before falling again to its current budget of EUR 30bn.

²⁶ Roubini Economic Research (2011).

about a forcible currency redenomination)²⁷. Many Greek households and businesses, under financial pressure, ran down their deposits / cash reserves to make ends meet and repay debt. Fears of a disorderly default and Grexit resurfaced again in the run-up to the May 2012 parliamentary elections which eventually ended in a deadlock²⁸. This resulted in a fresh round of deposit outflows. Deposits stabilised only after the new parliamentary elections in June 2012 produced a coalition government that declared its intention to implement the terms of the bail-out agreement²⁹. However, during this entire period of economic and political turmoil (January 2010 to June 2012), private sector deposits plummeted by 37 per cent, as Greek households and businesses pulled close to EUR 87 billion out of domestic banks.

Throughout the crisis, Greek banks were heavily reliant on the ECB for their liquidity needs. The major sources of funding for European banks are usually deposits, interbank borrowing, capital markets and the liquidity operations carried out by the ECB. During the crisis, the markets remained closed to many Greek banks, and consequently, most of their wholesale funding came from the Eurosystem. ECB's extraordinary measures to provide liquidity via the Eurosystem included:

- Suspension of the link between sovereign credit ratings and eligibility of collateral for refinancing operations³⁰;
- Intervention directly in the government bond market under the SMP³¹, with the aim of containing the risk of spillover to other banking systems and keeping borrowing costs at reasonable levels. The ECB purchased EUR 50 bln of GGBs between May 2010 and February 2012 when it was terminated³², although around 75 per cent of that amount was bought between May and July 2010³³. According to the IMF, the SMP made an important contribution to safeguarding the banking system's liquidity by stabilising prices for government bonds³⁴ (see Section 3.3 for a further discussion on the role of the SMP).
- Acceptance of uncovered bank bonds guaranteed by the government as eligible collateral for refinancing operations.

Over time, however, as wholesale funding markets remained closed and banks' access to Eurosystem refinancing suffered due to a lack of eligible collateral³⁵, Greek banks increasingly relied on emergency liquidity assistance (ELA) from the Bank of Greece (BoG). Borrowing through ELA came at a higher price than borrowing through monetary policy operations, which further affected banking sector profitability – see 0. At its peak in February 2012, banks' reliance on Eurosystem funding and the ELA reached unprecedented

²⁷ Christodoulakis, G. (2014). *Managing Risks in the European Periphery Debt Crisis: Lessons from the Trade-off between Economics, Politics and the Financial Markets*, 23 December 2014, Springer.

²⁸ Allen, P. (2012). *Huge Sense of Doom Among 'Grexit' Predictions*, 14 May 2012, CNBC

²⁹ New Democracy, PASOK and the minor Democratic Left party joined forces to form a coalition government led by Antonio Samaras and pledged to 'do whatever it takes' to keep Greece in the eurozone.

³⁰ In May 2010, the ECB Governing Council decided to suspend the minimum requirements for credit quality thresholds for certain marketable instruments issued or fully guaranteed by the central governments of Euro area Member States under an EU/IMF programme.

³¹ ECB (2010). *Monthly Bulletin - June*. Available at: https://www.ecb.europa.eu/pub/pdf/other/mb201006_focus01.en.pdf

³² Christodoulakis, G. (2014). *op cit*.

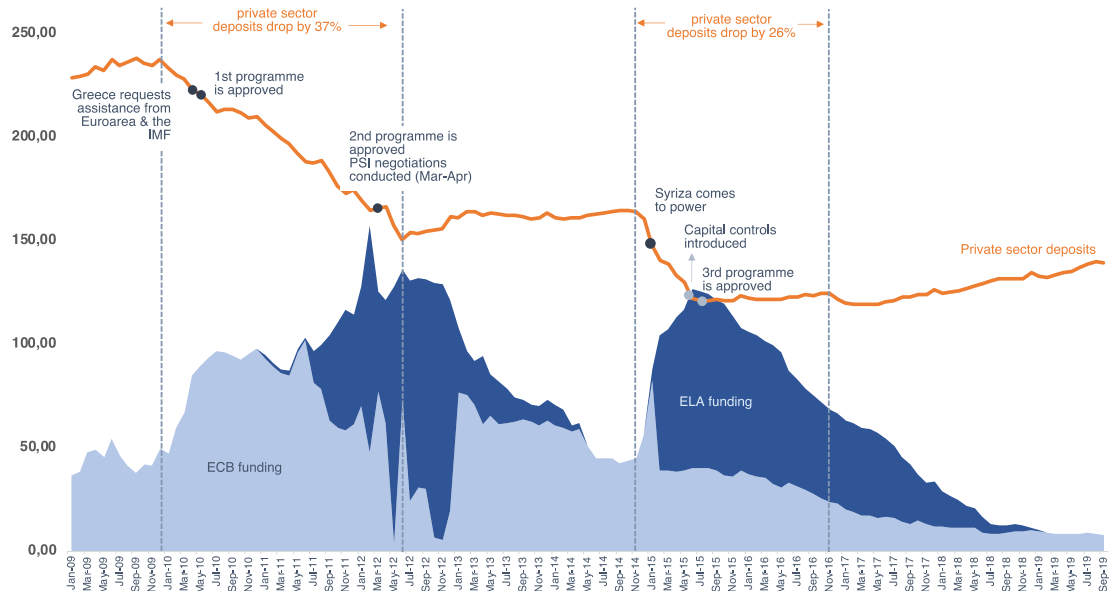
³³ Christodoulakis, G. (2014). *op cit*.

³⁴ IMF First Review under the Stand-By-Arrangement.

³⁵ The collateral the banks could use to obtain liquidity from the Eurosystem became either impaired or ineligible following the downgrading, first, of the country's credit rating, and, then, their own.

levels, of almost EUR 160 billion (over 80 per cent of GDP) – Figure 3.5 **Error! Reference source not found.**

Figure 3.5 Greek banks - private sector deposits and Eurosystem funding profile, EUR bln



Source: Bank of Greece. Note: Repos not included

Box 3.3 Emergency Liquidity Assistance (ELA)

From August 2011 onwards, Greek banks started relying heavily on the ECB's special credit line to the Greek banking system, called the Emergency Liquidity Assistance (ELA). Faced with temporary liquidity problems, a solvent financial institution could access ELA via the national central bank. Under ELA, a broader range of assets were accepted as collateral (with relevant haircut being higher), but the funds were lent at a rate incorporating a 100 to 150bp premium over the refi rate (the rate at which ECB carried out refinancing operations)³⁶.

The ELA agreement between Eurozone NCBs and the ECB, specified the rules applying to the provision of ELA and the role of the Governing Council of the ECB. According to it, the ECB Governing Council had the power to limit ELA operations if they were deemed to be interfering with the Eurosystem's objectives and missions. It set limits on the overall volume of ELA operations envisaged for the Greek banks. These limits were reviewed on a weekly basis and were incrementally increased by the ECB over time. The ECB Governing Council made decisions based on a two-thirds majority of the votes cast.

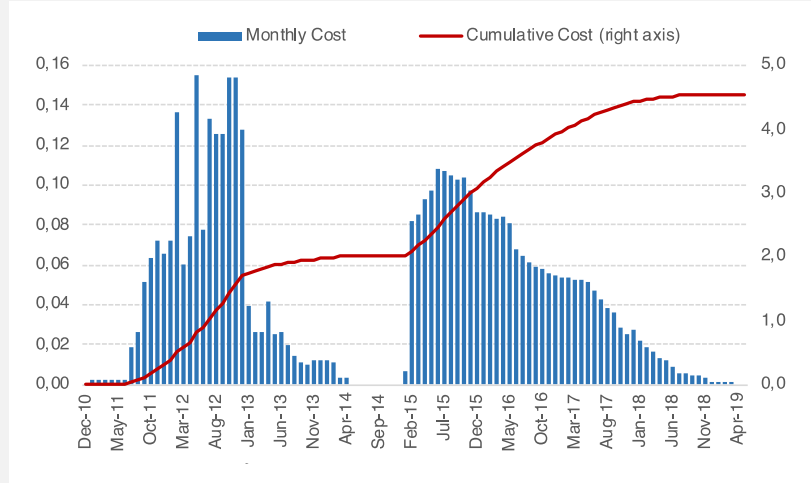
Greek banks depended heavily on ELA, during the periods they were suspended as eligible counterparties with the Eurosystem. For example, in the period following the PSI (May to December 2012), Eurosystem funding came almost exclusively in the form of ELA, with the ECB having disqualified most Greek banks from accessing the monetary policy operations window (due to capital adequacy ratios below the minimum requirement)³⁷. Banks also took heavy recourse to this expensive source of financing again in the first half of 2015, as deposits dropped and they were unable to use Greek government bonds in refinancing operations.

³⁶ BNP Paribas, 2015.

³⁷ IMF First and Second Review under the extended arrangement under the extended fund facility, January 2013,

The ELA had a high price tag attached to it. The direct cost of the ELA is estimated to be in the order of EUR 4.5 bln, of which EUR 2 bln concerned the 2011-14 period and EUR 2.5 bln the 2015-2019 period (Figure 3.6). The ELA also had an indirect cost for the banks as it reduced their lending capacity.

Figure 3.6 ELA cost estimation for banks, in EUR bln



Source: Bank of Greece, ECB, Data Modification: IOBE

There was some respite following the approval of the second economic adjustment programme and execution of the PSI. Liquidity pressures eased between June 2012 and December 2014 as deposits stabilised (circa EUR 10 bln of domestic private deposits returned to the banking system during this period)³⁸. In 2013, Greek banks regained access to cross-border interbank markets and during most of 2014 had easy access to interbank funding³⁹. During 2014, the Greek banks gradually eliminated their dependence on ELA, as a result of an increase in their eligible collateral, interbank repo transactions and share capital increases⁴⁰. Banks were able to raise EUR 8.3 bln in fresh private equity through the second recapitalisation process that took place in May and June 2014. Greece's improving credibility and market confidence in the prospects of the economy even allowed the banks to raise more than EUR 5 bln via issuance of debt on international markets during 2014⁴¹.

The period of stability was short-lived. The election victory of SYRIZA in January 2015 triggered a fresh wave of Grexit fears and a deposit run. In January 2015, SYRIZA government came to power on the back of an anti-programme and anti-austerity rhetoric. The confrontational approach adopted by the government, de facto suspending the economic adjustment programme, led to a crisis of confidence and liquidity. In February 2015, ECB withdrew the waiver on eligibility of Greek government bonds as acceptable

³⁸ Cyprus bail-in did not seem to have a contemporaneous effect on Greek deposits, albeit it set a precedent which may have been looming among Greek depositors in forthcoming comebacks of uncertainty

³⁹ Bank of Greece Annual Report 2013 and 2014.

⁴⁰ In March 2014, Alpha Bank and Piraeus Bank raised enough new private capital to repurchase preference shares held by the government for EUR 940 mln and EUR 750 mln, respectively. Source: IMF Fifth Review under the extended arrangement under the extended fund facility, June 2014.

⁴¹ Monokroussos, P. and Gortsos, C., 2017. Non-Performing Loans and Resolving Private Sector Insolvency: Experiences from the EU Periphery and the Case of Greece

collateral^{42,43} (in the press release announcing the decision, the ECB pointed out that it was not possible to assume a successful conclusion of the programme review⁴⁴). As a result, Greek banks could no longer use Eurosystem open market operations to raise liquidity at very low rates (0.05 per cent); instead they had to rely on the more costly ELA mechanism (at a rate of 1.55 per cent)⁴⁵.

Meanwhile, as the liquidity pressures created by the deposit flight amplified, the ECB kept raising its limit on ELA for Greek banks to cover their huge deposit outflows (the ELA limit was increased from EUR 50 bln in February 2015 to EUR 89 bln in June 2015). But on 28 June 2015, the ECB's governing council decided against further increases in the amount of ELA available to Greek banks due to the uncertainty created by the Syriza government's surprise decision to call a snap referendum⁴⁶. This meant that Greek banks could no longer meet the demands for cash by borrowing more funds from the Bank of Greece.

With banks' liquidity buffers close to being exhausted, access to additional ELA restricted and deposit outflows not abating, the Greek authorities were forced to take extraordinary measures to protect bank liquidity. During December 2014 to June 2015, households and businesses withdrew EUR 43 bln from banks (nearly a quarter of the total deposits). According to the Bank of Greece, about a third of Greece's deposit outflows were effected through the withdrawal of banknotes (for hoarding cash "under the mattress"); one third was transferred to banks abroad; and one third was invested in foreign money market instruments⁴⁷.

As banks almost ran out of cash, the Greek government imposed sweeping capital controls on 28 June 2015 and introduced a bank holiday period to stem deposit outflows. On 18 July 2015 a new legislative act was passed, with which the bank holiday period ended and banks re-opened. However, certain restrictions on cash withdrawals and transfers of funds remained. Capital controls were gradually relaxed in line with a conditions-based roadmap⁴⁸, but were fully lifted only on 1 September 2019.

Box 3.4 Main elements of the capital controls introduced in 2015

- Early loan repayments allowed only if made through transfer from abroad or in cash.
- Early redemption of time deposits allowed only under specific circumstances.

⁴² Since 2010, GGBs were classified as junk by all the major rating agencies. As a result, they were ineligible as collateral for ECB's refinancing operations. However, in order to ensure the proper operation of the Greek financial system, the ECB introduced a waiver to allow banks to use GGBs as collateral as long as Greece complied with the conditions of an EU-IMF financing programme.

⁴³ The waiver was later re-instated in June 2016, thus allowing Greek banks to access ECB's regular open-market operations, thereby reducing their dependence on the emergency liquidity lifeline.

https://www.ecb.europa.eu/press/pr/date/2016/html/pr160622_1.en.html

⁴⁴ <https://www.ecb.europa.eu/press/pr/date/2015/html/pr150204.en.html>

⁴⁵ Speech by Bank of Greece Deputy Governor John (Iannis) Mourmouras in Oxford entitled: "On Emergency Liquidity Assistance: theory and evidence", 27 June 2017. Available at: <https://www.bankofgreece.gr/en/news-and-media/press-office/news-list/news?announcement=c91acffb-3322-4472-82a0-90d17fc17cce>

⁴⁶ On 26 June 2015, the Syriza government announced its decision to hold a referendum on 5 July 2015 on the bailout terms put forward by its international creditors. As the announcement of the referendum created a huge amount of uncertainty about the future of Greece within the euro area, the ECB could no longer justify increasing its exposure to Greece

⁴⁷ Speech by Bank of Greece Deputy Governor John (Iannis) Mourmouras dated 27 June 2017, op cit

⁴⁸ In May 2017, the authorities published a conditions-based roadmap for the liberalization of capital flow management measures (CFMs)

- EUR 60 daily limit on cash withdrawals and a cumulative EUR 420 weekly limit per depositor
- New accounts/ customer IDs only permitted in certain cases for selected groups of individuals and companies.
- Transfers abroad for general purposes not permitted (some exceptions applied)
- Individuals' physical transfer of funds abroad not permitted (some exceptions applied)
- Business transfer for normal business activity of funds abroad subject to approval of the Bank Transactions Approval Committee.

Source: IMF Country Report No. 18/248

3.2.1.2 Effectiveness of the measures taken to maintain liquidity and confidence

Following the imposition of capital controls, the deposits in the banking system stabilised. Banks' deposit bases stabilised in the third quarter of 2015 and even increased by EUR 1.7 bln in the fourth quarter of 2015, as depositor confidence started to gradually return after the completion of the third round of recapitalisation in December. The level of deposits however, fluctuated during the next 18 months:

- During the first quarter of 2016, deposits dropped once again due to uncertainty about the completion of the first review of the Third Economic Adjustment Programme and specifically, issues relating to social security reform and additional fiscal measures;
- Private deposits grew by EUR 5.8 bln in the remainder of the year following completion of the first review and the approval of the second tranche of EUR 10.3 bln by the Board of Directors of the ESM on 17 June 2016; and the ECB's decision to reinstate the waiver for GGBs on 22 June 2016;
- Deposits declined again in first quarter of 2017 as a result of uncertainty regarding the achievement of an agreement between the institutions and the Greek authorities on key reforms.

From the second quarter of 2017, private deposits have been trending up, though they remain below 2014 levels – **Error! Reference source not found.**

Rising private deposits and access to interbank funding enabled banks to fully repay ELA in March 2019. From June 2016 onwards, both overall reliance on the Eurosystem and reliance on ELA continued to decline. This was due to an increase in banks' deposit base and an expansion in liquidity sources (use of banks' assets that are not eligible as collateral in the Eurosystem monetary policy operations, for interbank repos. Access to financing through interbank repos has been on the rise since September 2015, but banks' ability to raise unsecured interbank funding remains limited, due the thinness of the market, and sensitivity to macroeconomic developments.

Greek banks regained access to the capital markets, but it remains difficult. In 2016, the National Bank of Greece raised around EUR 300 mln through a securitization transaction of corporate loans, while Eurobank issued two covered bonds of EUR 975 mln and EUR 1.2 bln respectively⁴⁹. In 2019, two systemic banks placed 10-year subordinated bonds in June/July, although at relatively high cost (yields of 9.75 and 8.25 percent)⁵⁰. More recently, Alpha Bank successfully issued a EUR 500mn Tier II bond on 7 February 2020, followed by a EUR 500 mln Tier II bond issuance by Piraeus Bank on 12 February 2020.

Eurosystem funding (particularly ELA) and the imposition of capital controls in 2015 played a key role in providing liquidity, restoring confidence and maintaining stability. It is evident from the analysis presented above that in absence of access to markets and faced with

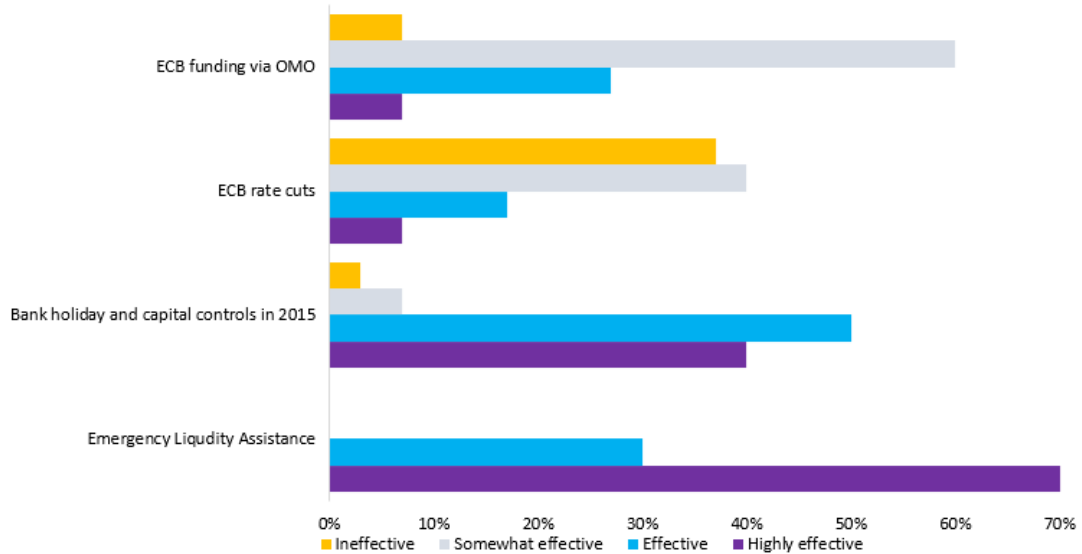
⁴⁹ Bank of Greece, 2017. Overview of the Greek financial system.

⁵⁰ IMF Country Report No. 19/340

significant and sustained deposit outflows over the period 2010-2015, access to Eurosystem funding was critical for the survival of the banking system.

Similarly, capital controls appear to have been necessary in 2015 to stem deposit outflows and restore stability. Both the Delphi panel of experts and key informants/ stakeholders interviewed, also highlighted the importance of ELA funding and the 2015 capital controls in addressing the liquidity needs of the Greek banking sector. Some stakeholders expressed the view that the collateral framework for the ECB's refinancing operations was too rigid and prohibitive, effectively pushing the Greek banks to the more expensive ELA. These stakeholders argued that the collateral framework for the ECB's refinancing operations could have been more relaxed.

Figure 3.7 Delphi survey - How effective were the following measures in addressing the liquidity needs of the Greek banks?



Source: ICF Delphi Survey, N=30

Although deemed necessary and effective, some stakeholders questioned whether capital controls were justified over a prolonged period. While one stakeholder suggested that capital controls could have even been introduced earlier with the benefit of hindsight, another stakeholder expressed the view that the ECB should have been more aggressive in relaxing capital controls. According to them, capital controls were understandable in the phase where Grexit was a threat, but not justified after the third programme had been agreed and the "Grexit threat" had dissipated as the ECB should have acted as a backstop to ensure sufficient liquidity in the system. In this context, this stakeholder explained that the timetable set for ELA payment was too aggressive. There was a trade-off between ELA repayment and relaxation of capital controls. Banks' liquidity buffers were shrinking due to the pressure to repay ELA as a result of which the Greek Government had to be cautious in relaxing capital controls. A more relaxed position on the repayment of ELA could possibly have enabled an earlier relaxation of capital controls. On the other hand, the presence of the ELA suggested that the Greek banks were not self-sufficient in terms of liquidity and that their liquidity profile was rather fragile. This was also evident by their high cost of unsecured funding and the limited return of deposits, despite an acceleration in 2019. In such a context, there would have been a degree of risk for authorities to lift the capital controls before the ELA was fully repaid. In addition, the repayment of the ELA was driven to a certain extent by the need for banks to reduce the cost of their short-term funding.

3.3 Solvency of the Greek financial sector

The following section addresses the study question 3a:

Question 3a: *What were the main reasons for the significant capital losses of Greek banks? What was the impact of the Private Sector Involvement (PSI) on the Greek financial sector and banks in particular?*

While there were a number of factors that resulted in capital losses for the Greek banks (see Section 3.3.1), this section focuses primarily on the impact of the PSI. It considers the following aspects:

- Design of the PSI;
- Exposure of Greek banks to the Greek Government Bonds (GGBs) prior to the PSI;
- Ability to estimate the direct financial losses resulting from the PSI;
- The size of the financial losses resulting from the PSI;
- The timing of the PSI;
- Immediate and medium to long run PSI effect on confidence.

Apart from banks, this section considers also the direct impact of the PSI on the insurance and pension funds separately.

3.3.1 Main reasons for the significant capital losses of the Greek banking sector

When examining the key reasons for significant capital losses of Greek banks, the literature⁵¹ distinguishes between phases of the crisis but typically points to the following factors:

- Impairment of the assets side of the banks' balance sheet because of NPLs (see also Section 3.4), sovereign downgrades reducing the value of GGBs and the banks' exposure to sovereign debt subjected to a haircut (linked to the PSI); and,
- Grexit and related currency redenomination fears that led to deposit and funding outflows.

The literature review, supplemented by a review of the sample of annual financial reports of the four largest Greek banks⁵² published between 2010-2018, reveals a set of other specific factors that drove down the profitability of banks (despite their major restructuring efforts to reduce the operational costs from 2010):

- Negative contribution of international operations of some banks, in particular in the South East Europe (SEE) region also affected by the crisis, e.g. in 2010, Piraeus Bank and NBG were exposed to nine and six foreign countries, respectively, and – in most – bore the costs of deterioration in real economies, as well as higher forex risks;
- Increase in cost of funding, e.g. due to loans' re-pricing, increased costs of deposits and lost access to unsecured and secured funding that had to be replaced by more expensive funding from the Eurosystem;
- Asset devaluation beyond the loan portfolio, e.g. via the impact of struggling subsidiary businesses of some banks, including insurance subsidiaries;
- Overall fall in volume of transactions, e.g. consumer and business loans, coupled with a drop in fees and commissions due to imposition of bank holiday and capital controls in 2015, among others.

⁵¹ IMF, 2017. Ex-post evaluation of EEF programme. Available at: <https://www.imf.org/en/Publications/CR/Issues/2017/02/07/Greece-Ex-Post-Evaluation-of-Exceptional-Access-Under-the-2012-Extended-Arrangement-Press-44636>

⁵² Alpha Bank, Eurobank, NGB, Piraeus Bank.

Generally, however, although challenging to assign relative weights to each of these factors, it seems safe to infer that the impact of the PSI on banks' capital position was one of the most significant. This is particularly relevant for 2011, when PSI-related losses were recognised in banks' financial statements. 0 shows that for some banks, PSI losses reported in that year were in excess of cumulative credit losses that in turn captured the effects of the protracted recession – underpinning the systematic erasure of banks' capital positions.

3.3.1.1 Design of the PSI

The plan for the PSI was officially announced at the EU Summit in July 2011. However, the Greek authorities had been assessing various options of debt restructuring since summer 2010, while President Sarkozy and Chancellor Merkel's call for a permanent crisis resolution mechanism in Europe that '*...would comprise the necessary arrangements for an adequate participation of the private sector*' (made at the trilateral Franco-German-Russian Summit in Deauville in October 2010⁵³) was widely interpreted as an official signal that debt restructuring would be acceptable in European Union (EU) countries⁵⁴.

On 6 June 2011, German Finance Minister, Wolfgang Schäuble, wrote a letter to the ECB and IMF proposing '*to initiate the process of involving holders of Greek bonds ... through a bond swap leading to a prolongation of the outstanding Greek sovereign bonds by seven years*⁵⁵. Shortly afterwards, a group of major French banks issued the first detailed proposal on what a Greek bond rescheduling might look like⁵⁶.

The Euro Summit statement in July 2011 declared the financial sector bondholders' willingness to support Greece on a voluntary basis in order to strengthen the overall sustainability of the Greek public debt. According to the (broad) proposal discussed during the Summit, the targeted net contribution of the private sector through PSI would have been around EUR 37 bln. Following deteriorating growth projections, the October 2011 Euro Summit statement acknowledged, however, that a deeper PSI would be needed. All types of private holders of Greek public bonds were therefore called to participate in a voluntary bond exchange at a nominal discount of 50 per cent in notional Greek debt. The Euro area Member States were expected to contribute up to EUR 30 bln to the PSI package⁵⁷.

The Euro Summit in October 2011 set the stage for a new round of negotiations between the Greek government and creditors later that month. The negotiations on behalf of the bondholders (including major banks and other institutional investors, such as hedge funds and insurers) were led by the International Institute of Finance (IIF), while the Ministry of Finance and the Public Debt Management Agency represented the Greek government. All three institutions were kept in the information loop but had no formal role. Their initial

⁵³ Bank of Greece, 2013. The Chronicles of the Great Crisis. Bank of Greece: 2008-2013. Available at: <https://www.bankofgreece.gr/Publications/Selections%20from%20The%20Chronicle%20of%20the%20great%20crisis%20-%20the%20Bank%20of%20Greece%202008-2013.pdf>

⁵⁴ The Greek debt exchange: an autopsy. Available at: <https://pdfs.semanticscholar.org/ff71/592f6a85a4bbb7c34c013e34c8f7fb1b2725.pdf>

⁵⁵ PIIE, 2011. What's behind the squabble over a new aid package for Greece? Available at: <https://www.piie.com/blogs/realtime-economic-issues-watch/whats-behind-squabble-over-new-aid-package-greece?p=2203>

⁵⁶ CEPS, 2011. An evaluation of the French proposal for a restructuring of Greek debt. Available at: <http://wp.ceps.eu/wp-content/uploads/2011/07/No%20247%20Kopf%20on%20France's%20proposal%20for%20restructuring%20Greek%20debt.pdf>

⁵⁷ Bank of Greece, 2012. Report on the recapitalisation and restructuring of the Greek banking sector. Available at: http://www.fiskalpakt.info/up/doclist/Report_on_the_recapitalisation_and_restructuring.pdf

views of the move differed, with the ECB sceptical about any possibility of a haircut, given the potential significant impact on the financial stability of the Euro area.

The deal between Greece and the representatives of the steering group (12 banks, insurers and asset managers, on behalf of bondholders) was agreed on 21 February 2012, with the formal offer made on 24 February 2012, following approval by the Ministerial Council of the Hellenic Republic. This offer looked very different from the initial proposal by the bondholders during the EU Summit in July 2011, entailing a deeper haircut and broader scope⁵⁸. The minimum participation threshold set by the three institutions and the Greek authorities was 90 per cent of the total eligible debt, and Greece gave creditors two weeks (until 8 March) to accept or reject the offer. On 9 March, the Greek government announced that 82.5 per cent of the EUR 177.3 bln in sovereign bonds issued under domestic law had accepted the exchange offer while the participation deadline for foreign law bondholders was extended till early April. The bonds started trading on 12 March⁵⁹. O summarises the final form of the PSI.

Box 3.5 Overview of the Private Sector Involvement (PSI)

Participation in the proposed Greek bonds swap was voluntary⁶⁰ and covered private sector holders (domestic and foreign law) whose holding stood finally at EUR 199.2 bln (out of EUR 205.5 bln eligible) of the outstanding face amount of Greek bonds (excluding t-bills⁶¹) issued before February 2012, or 96.9 per cent participation. The ECB, Greece's single largest bondholder by far with EUR 42.7 bln (16.3 per cent) of holdings in February 2012 – along with the national central banks and the EIB were excluded from the PSI.

The terms of the PSI included:

- Existing Greek bonds were exchanged for new bonds (under English, rather than Greek law) issued by the Hellenic Republic. These had a face value equal to 31.5 per cent of the face value of the old bonds. In addition, creditors received EFSF notes maturing within 24 months or less from the PSI settlement date, which had a face value of 15 per cent of the face value of the old bonds;
- New bonds had a 2.0 per cent coupon per annum for payment dates in 2013 - 2015, a 3.0 per cent annual coupon for payment dates in 2016 - 2020, a 3.65 per cent annual coupon in 2021, and a 4.3 per cent per annum for payment dates from 2022. Fixed interest on EFSF notes accrued from 12 March 2012 and was determined on the issue date. Similar to bonds, the notes were also subject to English law;
- Holders also received detachable GDP-linked securities⁶² of the Hellenic Republic.

Source: Ministry of Finance, press Beyond Austerity – Reforming the Greek Economy; Munevar, D. (2017). Greece: The PSI and the process of bank recapitalisation.release, 24 February 2012; Ministry of Finance, press release, 9 March 2012; MIT (2016).

As a result of the PSI, Greece became the first Organisation for Economic Co-operation and Development (OECD) member country to default on its sovereign debt, a default that

⁵⁸ For more details and the comparison of these offers, see Zettelmeyer, J., 2013. The Greek debt exchange: an autopsy. Available at: <https://pdfs.semanticscholar.org/ff71/592f6a85a4bbb7c34c013e34c8f7fb1b2725.pdf>

⁵⁹ Zettelmeyer, J. 2013. The Greek debt exchange: an autopsy. Available at: <https://pdfs.semanticscholar.org/ff71/592f6a85a4bbb7c34c013e34c8f7fb1b2725.pdf>

⁶⁰ Unless bonds representing at least 90% of the aggregate face value of all bonds selected to participate in the PSI programme were validly tendered for exchange, the Republic would not have been required to settle any of the exchanges.

⁶¹ Approximate outstanding value of EUR 16 billion as of January 2012.

⁶² Annual payments beginning in 2015 of up to 1% of their notional amount in the event the Republic's nominal GDP exceeded a defined threshold and the Republic had positive GDP growth in real terms in excess of specified targets.

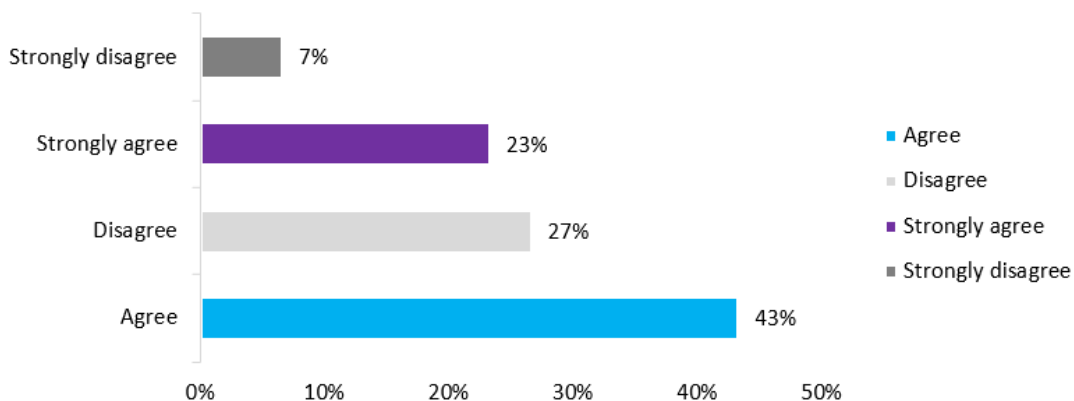
was the largest in history⁶³. Overall, the PSI was a substantially complex exercise, with core negotiations lasting from October 2011 to March 2012 and involving a considerable number (and type) of bondholders from various jurisdictions. The negotiations were conducted in exceptionally challenging circumstances and against the clock, given the imminent redemption of pre-PSI 'old bonds' on 20 March 2012, that Greece would have had to find the resources to meet⁶⁴.

The existing literature suggests that both the negotiations and execution of the PSI were relatively successful, despite the challenging environment and *sui generis* and complex character of the exercise. The PSI attracted near-universal participation, surpassing the targeted improvement in debt dynamics under the programme⁶⁵. The deep and orderly relief achieved by the PSI was no small feat, although critics argue that the design of the terms could have been better for the Greek treasury, pointing to alternative terms that would have allowed greater debt reduction⁶⁶.

Most of the stakeholders interviewed believed that the design and execution of the PSI was successful, with some stating that a better outcome was unlikely under the circumstances. Several, however, pointed out that excluding some types of public bondholders, in particular ECB, reduced the effectiveness of the PSI, a view also expressed by the IMF⁶⁷ and discussed in detail in the literature⁶⁸. Some argued that the PSI should have been implemented earlier (see detailed discussion under Section **Error! Reference source not found.**).

The overall view of the Delphi respondents was similar, with 70 per cent of the respondents agreeing/strongly agreeing with the statement that the PSI was well designed.

Figure 3.8 Delphi survey - the extent to which you agree or disagree that the PSI was well designed



Source: Delphi survey, N=30

⁶³ Gourinchas, P. et al., 2017. The analytics of the Greek crisis.

⁶⁴ Financial Times, September 13, 2012. PSI lost. Available at: <https://ftalphaville.ft.com/2012/09/13/1157731/psi-lost/>

⁶⁵ IMF, 2012. Request for the extended arrangement under EFF. Available at: <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Greece-Request-for-Extended-Arrangement-Under-the-Extended-Fund-Facility-Staff-Report-Staff-25781>

⁶⁶ Zettelmeyer, J. 2013. The Greek debt exchange: an autopsy. Available at: <https://pdfs.semanticscholar.org/ff71/592f6a85a4bbb7c34c013e34c8f7fb1b2725.pdf>

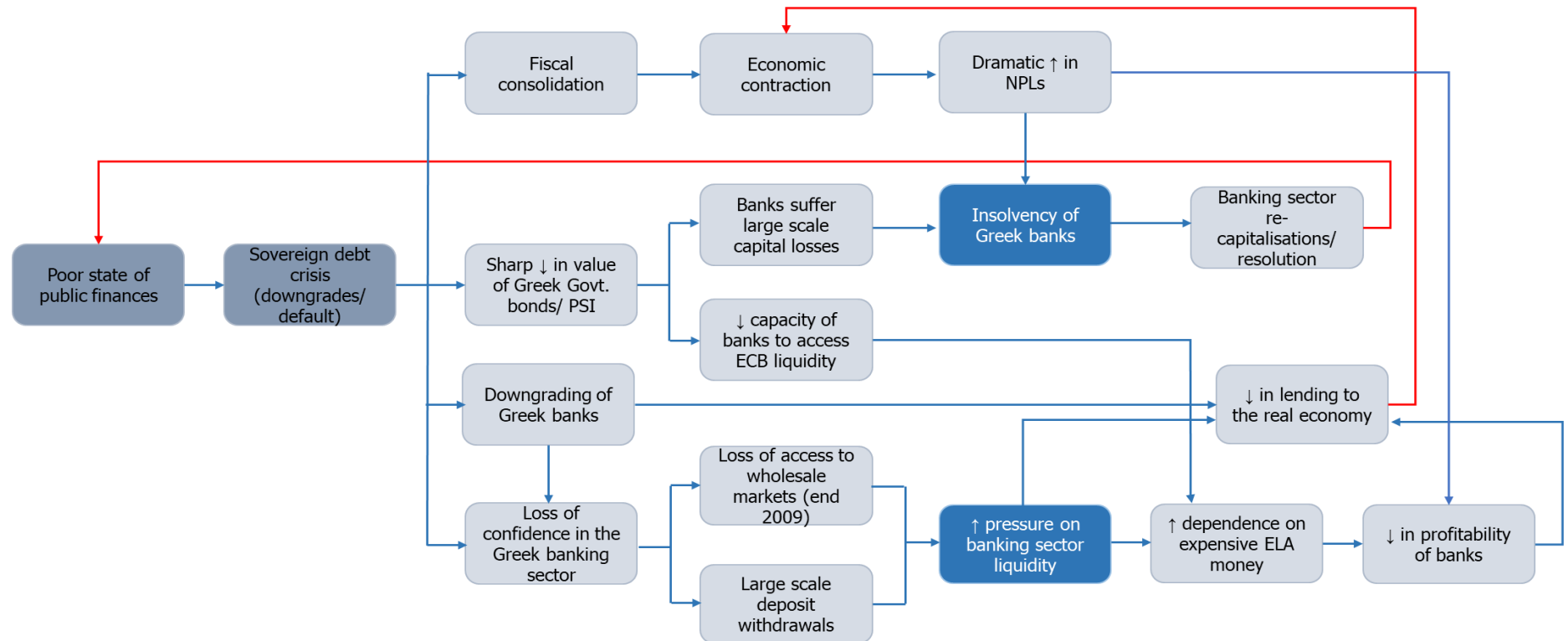
⁶⁷ IMF (2013). Greece: ex post evaluation of exceptional access under the 2012 extended arrangement. Country Report No. 17/44

⁶⁸ Allen & Overy, September 2012. How the Greek debt reorganisation of 2012 changed the rules of sovereign insolvency.

3.3.1.2 Sovereign-banking feedback loop and the exposure of Greek banks to GGBs

One of the main challenges faced by policy makers was Greek banks' high direct and indirect interlinkages with their sovereign. The 'sovereign-banking feedback loop' had two channels. In the first, the sovereign's weakening fiscal situation negatively affected the value of banks' assets due to banks' high exposure through direct GGBs' holdings, at both intertemporal and cross-country record high levels (Figure 3.9). Banks' portfolio values were also indirectly hit by the weakening worth of state guarantees backing several loans and deposits.

Figure 3.9 Stylised illustration of the sovereign-banking feedback loop



Source: Wilkinson, C.

Conversely, weakening banks had significant spill over effects on the Greek public finances. Firstly, because the state was obliged to recapitalise the banks on two⁶⁹ distinct occasions within less than five years and increase its provision of guarantees, both measures of which incurred high fiscal costs. Secondly and not least importantly, because weakening banks' balance sheets and the need for deleveraging deepened further the recession through significant credit contraction, further slowing investment and weakening tax revenue⁷⁰.

The exposure of Greek banks to GGBs was already comparatively high before the financial crisis, reaching 5.6 per cent of the total banking system assets in Greece in May 2008 (compared to 2.2 per cent for the Euro area and PIICS⁷¹ countries, Figure 3.10). This share not only increased from the end of 2008 to the execution of the PSI in early 2012 but the rate of that increase was rather high, despite the contracting economy and rapidly increasing country risk premium. The exposure of Greek banks to GGBs in December 2011 was 9.4 per cent of the total banking assets – almost 70 per cent higher than in May 2008. It is worth to note, however, that Greek banks were not exceptional in this respect. The literature shows⁷² that other banks in the EU including Irish, Spanish and Italian ones reacted in a similar way.

Figure 3.10 GGBs as a percentage of the total assets of the banking system



Source: ECB SDW

There is no single explanation for this 'home bias' of Greek banks. However, one that has been often cited in the literature⁷³ and was also raised by number of interviewees including the representatives of the three institutions, some Greek stakeholders and interviewed representatives from the private sector/ non-governmental sector, was that Greek banks were pressured by the government to buy its bonds, with pressure increasing during the crisis, when the state faced greater difficulties in raising the necessary financing. According

⁶⁹ The second recapitalisation involved exclusively private financing.

⁷⁰ MIT, 2016. Beyond austerity – reforming Greece's economy.

⁷¹ Portugal, Ireland, Italy, Cyprus, Spain.

⁷² Battisini, N. 2014. Systemic risk, sovereign yields and bank exposures in the euro area. Available at: <https://academic.oup.com/economicpolicy/article-abstract/29/78/203/2918380>

⁷³ Halliasos, M., Hardouvelis, G., Tsousoura, M. and Vayancos, D. 2016. Financial development and the credit cycle in Greece

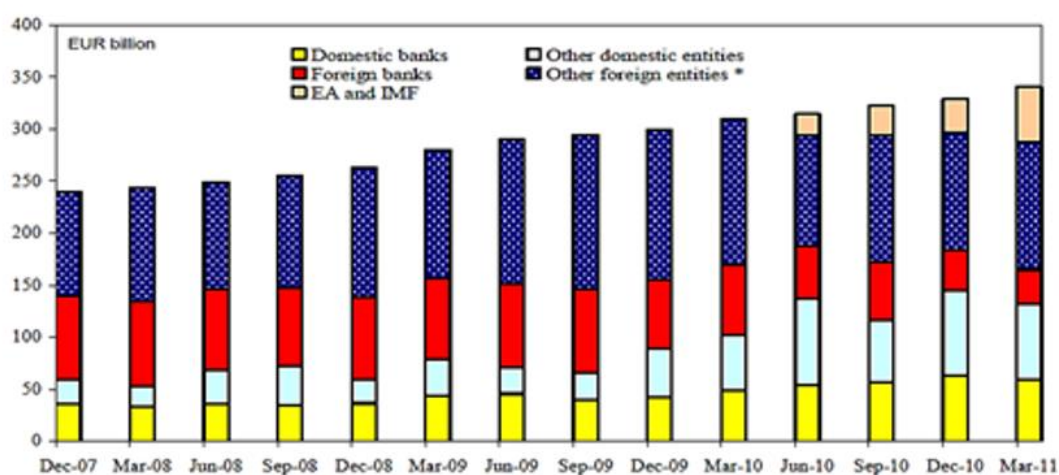
to Haliassos et al.⁷⁴, this explanation⁷⁵ implies that domestic exposure should be larger for state-controlled banks than for privately controlled banks, as the state has more leverage over the former. The data support this assertion: holdings of GGBs and other loans to the Greek state were 303 per cent of capital for the aggregate of state-controlled banks (National Bank of Greece, ATE Bank, Postbank) and 171 per cent for the aggregate of privately controlled banks (Eurobank, Alpha Bank, Piraeus, Emporiki Millenium, Geniki, Attica, Probank, Proton, FBB, Panellinia).

In hindsight, however, it seems that the possibility of Greek banks to reduce their exposure to GGBs was also constrained. While one interviewee noticed that in case of Grexit and currency redenomination (return of drachma) banks would have been hedged 'to some extent' as apart from their assets their liabilities would have been redenominated too, several other interviewees (e.g. EC and BoG) stressed the causality between the solvency of the state and the solvency of the banks. Banks, facing the risk of state default - with shockwave implications for the real economy as well as their existing capital positions (e.g. recession impact and the direct hit due to the state's default on their GGBs) - had an implicit interest in sustaining fiscal stability for as long as possible. Without a doubt, government pressure must have played a role, even though banks were also deriving profit on spreads of its GGBs holding.

One of the tools that might have allowed a sizable reduction in the exposure of Greek banks to GGBs was the ECB Securities Market Programme (SMP), a sovereign bond buying operation launched by the ECB on 9 May 2010 and maintained until September 2012. The SMP focused on purchasing Irish, Portuguese, Spanish and Greek debt⁷⁶ to alleviate the pressure from distressed sovereign bond markets and contain the risk of spillover to other banking systems in 2010.

Publicly available data on the evolution of the holding of Greek debt disaggregated by type of creditor is scarce and incomplete. Figure 3.11 shows this evolution, albeit only until March 2011. In essence, exposure of the Greek banks was on the rise from mid-2009, while that of foreign banks was declining. The exposure of the EA, the IMF and the ECB (included under 'other foreign entities') also increased.

Figure 3.11 Holding of Greek government debt, December 2007-March 2011



Source: Commission services

⁷⁴ Halliasos, M., Hardouvelis, G., Tsousoura, M. and Vayancos, D. 2016. Financial development and the credit cycle in Greece.

⁷⁵ Consistent Moody's view that governments are typically quite effective in encouraging domestic banks to retain domestic bonds.

⁷⁶ ECB, 2010. Monthly Bulletin - June. Available at: https://www.ecb.europa.eu/pub/pdf/other/mb201006_focus01.en.pdf

Note: 'other foreign entities' includes the ECB

Anecdotal evidence shared by the interviewees that corroborate with evidence found in the literature⁷⁷ suggests that most of the Greek debt offloaded via the SMP was owned by foreign (primarily French and German) banks rather than Greek banks. The ECB, however, has not published the data on the volume of purchased GGBs, the origin of sellers and the timing and specific amounts that main type of creditors offloaded via the SMP since its inception in May 2010⁷⁸. Therefore, it is not possible to specify with high degree of precision the amount of debt offloaded by Greek *versus* foreign banks between May 2010 and September 2012 when the SMP was active. It is understood, however, that some 75 per cent of the GGBs offloaded by banks via SMP was done in its initial phase, between May and July 2010, with the total amount of bond purchases in that period around EUR 35 bln, a small proportion of which sold by Greek banks^{79,80}. This then raises the question of why Greek banks did not benefit from this opportunity, as other foreign banks sensibly did. One hypothesis (consistent with the proposition of Haliassos et mentioned earlier) offered by an interview with no association to the three institutions and Greek authorities and closely involved in the analysis of this issue was the government pressure exercised on banks. In short, the authorities were concerned about the potential rise in spreads on GGBs in case of the sell-off by Greek banks, and hence encouraged them to do not do so.

More broadly, it is worth highlighting that one of the effects of the ECB purchases via SMP was a highly localized but substantial impact on the bonds' yields⁸¹ for those categories of Greek bonds that were actually purchased⁸². In addition, the ECB lowered collateral requirements for Greek banks on 5 May 2010 so that all GGBs held would still qualify for its purchase programme despite falling below the investment grade - a considerable support for the state and for Greek banks. Given the ECB's objective to contain the contagion risk in domestic and international banking systems in 2010, allowing banks (including French and German) to offload GGBs from their balance sheet appears logical.

3.3.1.3 Estimated and actual direct impact of the PSI on Greek banks

Gauging the direct impact of the PSI on capital base of Greek banks was a straightforward exercise, albeit only once its details were pinned down, and the process took some time. Conceptually, the impact of the PSI can be derived as the function of the product of the size of the GGBs held by a bank and the effective haircut ratio. Experts from the EC who were directly involved in the exercise perceived it as relatively straightforward.

However, while there was some crude understanding of the plausible ranges of the haircut as early as 2011, the effective hair-cut ratio was only fixed in February 2012 and so the exact impact of the PSI could not be known until then only. For that reason, the European Commission had therefore conducted the sensitivity analysis based on the range of potential PSI options.

⁷⁷ Trebesch, C. and Zettelmeyer, J., 2016. ECB interventions in distressed sovereign debt market: the case of Greek bonds.

⁷⁸ The only available data are the aggregate figures published by the ECB, including a breakdown per year. Available at: <https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html>

⁷⁹ Trebesch, C. and Zettelmeyer, J., 2016. ECB interventions in distressed sovereign debt market: the case of Greek bonds.

⁸⁰ The ECB only bought a subset of 31 out of the 81 Greek bonds outstanding via SMP and it favoured large benchmark bonds with a maturity of less than 10 years, and with comparatively high yields.

⁸¹ A drop between 70-170 bps for bonds purchased during the eight weeks following the start of the SMP on 10 May 2010.

⁸² IMF, 2016. ECB interventions in distressed sovereign debt market: the case of Greek bonds. Available at: https://www.imf.org/external/np/res/seminars/2016/arc/pdf/Trebesch_Zettelmeyer_Session1.pdf

Generally, the staff interviewed from the EC, ESM and BoG perceived the estimation of the impact of the PSI on Greek banks as far less challenging compared to modelling other impacts, such as potential losses of the loan portfolios due to recession, effective recovery rate of the collateral held by banks, or the impact of some major legislative acts such as the Katseli Law (2010). The sensitivity analysis did not appear to include assumptions on the potential secondary impact of the PSI on confidence (see Section 3.3.1.3).

Once implemented, the PSI had several positive effects on public debt:

- Nominal value of the Greek debt was reduced by EUR 107 bln (from an eligible PSI base of EUR 205.5 bln) corresponding to a hair-cut of the eligible PSI base by 53.5 per cent, or nearly 50 per cent of Greek GDP at the time of the swap⁸³;
- Structure of the public debt changed, as the share of public creditors in the total stock rose from 35 per cent to over 50 per cent alleviating some short-term pressures stemming from the difference in maturities between private and public creditors' holdings. In addition, the shift from private to official creditors came with much better terms, namely below market rates and long maturities. Overall, the PSI corresponded to the 29 per cent reduction of public debt as of end-2011 (a reduction in debt of EUR 10,000 per Greek citizen)⁸⁴.

At the same time, given the exposure to the GGBs, Greek banks experienced total losses of EUR 37.7 bln in their holdings of bonds (of which EUR 28.2 bln was held by four systemic banks) and other loans to the Greek state. This represented 10 per cent of their total assets, or 170 per cent of their total Core Tier I capital at that time, while the banks' provisions set aside for PSI-related losses were only EUR 5.8 billion, according to their 2011 financial statements. Banks net-of-provision losses from Greece's sovereign default were EUR 31.9 bln wiping out their capital base and leaving some of the largest banks insolvent and others seriously undercapitalised. In addition, PSI accounted (indirectly) for some of the projected losses on the banks' private sector loan portfolios due to its recessionary impact⁸⁵. As a result of the PSI, the first recapitalisation was needed (more on recapitalisations under Section **Error! Reference source not found.**).

0 illustrates banks' capital needs, including direct impact of the PSI⁸⁶.

⁸³ Some research suggests that by offering the same package of 'new bonds' regardless of the differences in the maturity of 'old bonds', the average haircut level may have differed and resulted in substantial differences in distribution of losses, depending on the maturity of the 'old bonds'. See, for instance, Zettelmeyer, J., 2013. The Greek debt exchange: an autopsy. Available at: <https://pdfs.semanticscholar.org/ff71/592f6a85a4bbb7c34c013e34c8f7fb1b2725.pdf>

⁸⁴ IMF, 2015. Blog: Greece - past critique and the path forward. Available at: <https://blogs.imf.org/2015/07/09/greece-past-critiques-and-the-path-forward/>

⁸⁵ Reduced capacity of banks to lend.

⁸⁶ Halliasos, M., Hardouvelis, G., Tsousoura, M. and Vayancos, D. (2016). Financial development and the credit cycle in Greece.

Table 3.1 Capital needs of banks, including direct impact of the PSI on the capital base of the Greek banks, in EUR bln

	CET1 capital 12/2011	PSI loss	Provisions for PSI, 06/2011	Credit loss projections	Loan loss reserves, 06/2011	Capital generation	Target CET1 capital, 12/2014	Capital needs
NBG	7.29	-11.74	1.65	-8.37	5.39	4.68	8.66	9.76
Eurobank	3.52	-5.78	0.83	-8.23	3.51	2.90	2.60	5.84
Alpha	4.53	-4.79	0.67	-8.49	3.12	2.43	2.03	4.57
Piraeus	2.62	-5.91	1.01	-6.28	2.57	1.08	2.41	7.34
Emporiki	1.46	-0.59	0.07	-6.35	3.97	0.11	1.15	2.48
ATEbank	0.38	-4.33	0.84	-3.38	2.34	0.47	1.23	4.92
Postbank	0.56	-3.44	0.57	-1.48	1.28	-0.32	0.90	3.74
Millennium	0.47	-0.14	0.00	-0.64	0.21	-0.08	0.23	0.40
Geniki	0.37	-0.29	0.07	-1.55	1.31	-0.04	0.15	0.28
Attica	0.37	0.14	0.05	-0.71	0.27	0.02	0.25	0.40
Probank	0.28	-0.3	0.06	-0.46	0.17	0.15	0.18	0.28
New Proton	0.06	-0.22	0.05	-0.48	0.37	0.03	0.12	0.31
FBB	0.15	-0.05	0.00	-0.29	0.17	-0.03	0.12	0.17
Panellinia	0.08	-0.03	0.00	-0.12	0.05	-0.03	0.04	0.08
Total	22.12	-37.73	5.86	-46.83	24.73	11.38	20.06	40.54

Source: Data from Table 1.1 of the BoG report on the recapitalisation and restructuring of the Greek banking sector (December 2012)/ Halliasos, M., Hardouvellis, G., Tsousoura, M. and Vayancos, D. (2016). Financial development and the credit cycle in Greece.

Note: For each row the quantities in the first seven columns add up to aggregate capital needs presented in the last column. The first seven columns illustrate the following quantities: (i) Core Equity Tier 1 capital as of December 2011, (ii) losses on GGBs and other loans to the Greek state during the PSI, (iii) provisions that banks set aside to meet these losses, (iv) projected losses in private sector loans, (v) provisions that banks set aside to meet these losses, (vi) projected addition to capital due to earnings during the period 2012 to 2014, (vii) target Core Equity 1 capital as of December 2014.

In addition, solvency problems generated liquidity problems. Banks faced difficulties financing themselves in both the interbank market and the market for retail deposits, as the guarantee by the government lost its value. The solvency and liquidity problem reflected the state-to-bank spillover channels of the sovereign-banking loop⁸⁷. Following the PSI, banks' ability to extend new credit was severely constrained⁸⁸.

3.3.1.4 Immediate and medium/long-term effect of the PSI on market confidence

The analysis of the effect of the PSI on market confidence is inherently challenging, given the range of potential shaping factors. It is also true that debt-restructuring without any impact on confidence is an oxymoron. However well designed and executed, erosion of confidence is an unavoidable offshoot of every debt restructuring operation. Nevertheless, several possible indicators and data sources may offer some insights:

- Experts' views fleshing out the factors other than the PSI that had a meaningful impact on market confidence at the time the PSI was negotiated and implemented;
- Selected data that may capture market responses to the PSI, including the Economic Uncertainty Index (EUI) and data on deposit outflows;
- Moody's communications, including relevant sector comments and ratings decisions between 2010 and 2013, focusing on references to the PSI's impact on the Greek banking/financial sector.

The period from mid-2011 was marked by speculation about a potential Greek exit from the Euro area and a gradual deterioration of the macroeconomic environment that, in turn, impacted on the general confidence level in the market. The IMF growth projections for Greece were revised downwards and achievement of the quantitative targets set in the first EAP became gradually less certain.

In addition, the period between mid-2011 and mid-2012 brought increased political uncertainty. The PASOK government resignation in November 2011 led to the formation of an interim technocratic government with a short-term mandate to execute the PSI. The risk of overturning the adjustment programmes loomed, as did the prospect of a snap election, which eventually took place in May and June 2012. All of these negatively affected market sentiment along any potential effects of the PSI.

Aggregate deposits did indeed drop by EUR 32.7 bln between October 2011 and June 2012 when the second elections took place, while the EUI shot up the opposite direction from mid-2011, before reversing sharply following the outcome of June 2012 election (Figure 3.12). Once the election was over, the bond market improved rapidly, although the IMF attributed the higher and more volatile spreads in late 2011-early 2012⁸⁹ to the uncertainty related to the details of the PSI, while market reaction to the successful exchange offer concluded on 8 March 2012 was 'muted' according to the IMF⁹⁰ – note that a drop in yields on March 8th shown in Figure 3.13 was associated mostly with the swap of old bonds into new ones that were of different features. These distinct changes in trends - coinciding neatly with the elections - suggest the importance of the political cycle, but without negating some effects of the PSI.

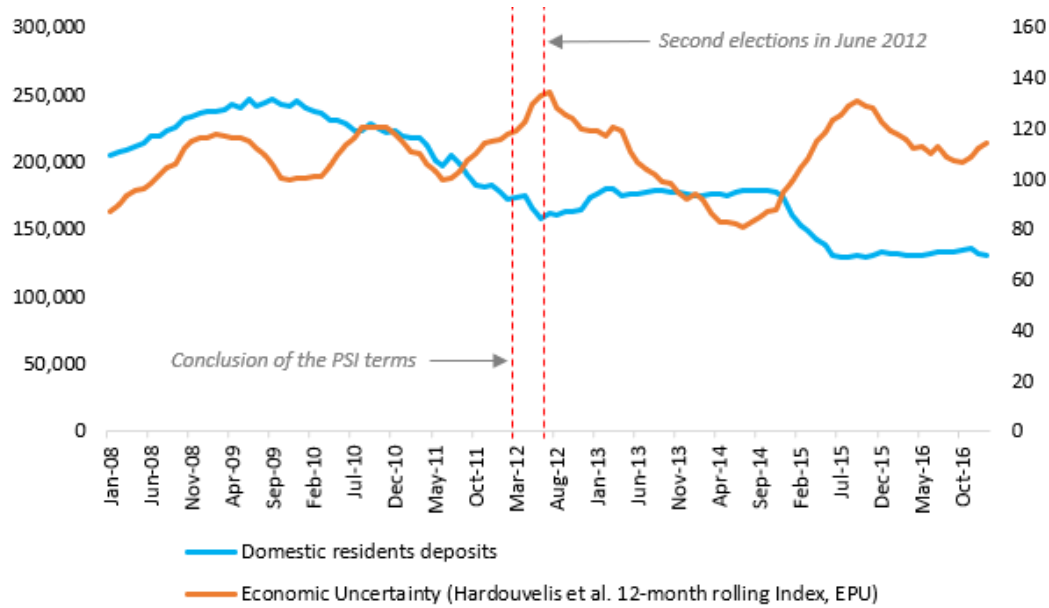
⁸⁷ Halliasos, M., Hardouvelis, G., Tsousoura, M. and Vayancos, D., 2016. Financial development and the credit cycle in Greece.

⁸⁸ ESM (2020). Restoring growth and financial stability: how Greek banks responded. Available at: <https://www.esm.europa.eu/publications/restoring-growth-and-financial-stability-how-greek-banks-contributed>

⁸⁹ 10-year bond spreads exceeded 3,200 bps in February 2012.

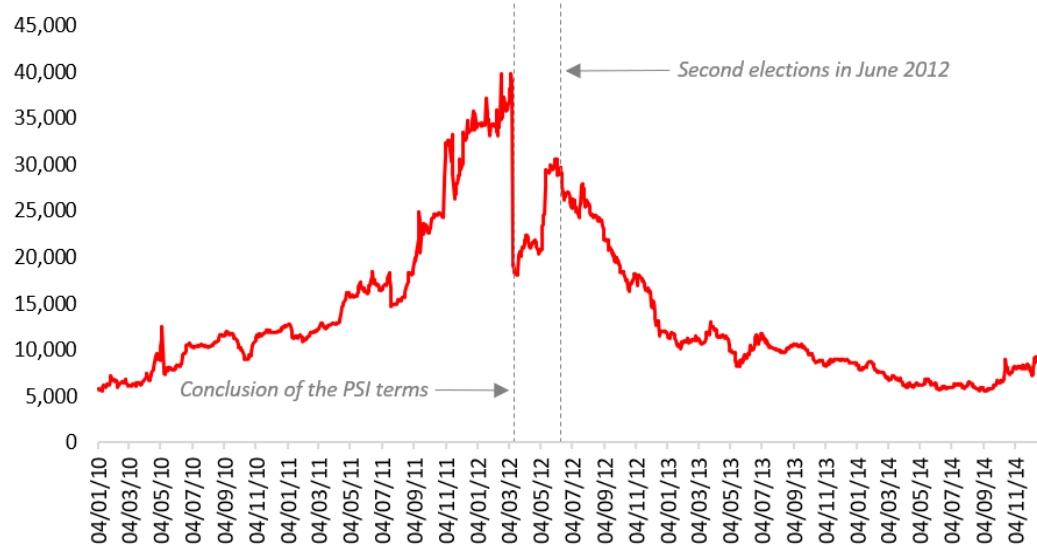
⁹⁰ IMF (2012). Request for the extended arrangement under EFF. Available at: <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Greece-Request-for-Extended-Arrangement-Under-the-Extended-Fund-Facility-Staff-Report-Staff-25781>

Figure 3.12 Domestic residents' deposits and EUI, Jan 2008-Jan 2017



Source: BoG and Hardouvelis (2017).

Figure 3.13 Yields – 10-year government bonds, in bps, January 2010- January 2015

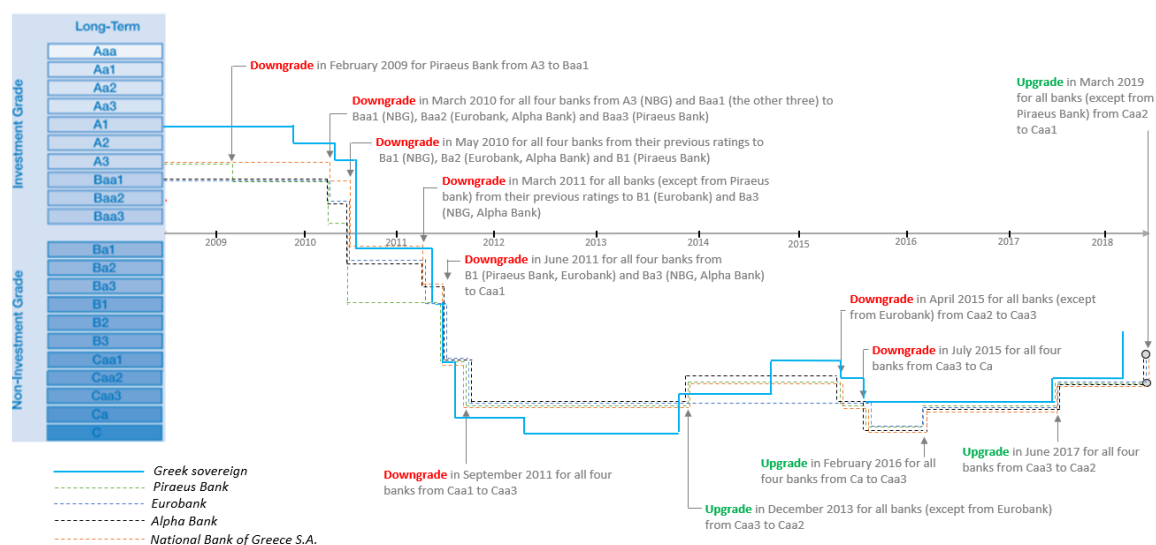


Source: BoG

While one stakeholder from the European Commission highlighted the fear and subsequent deposit flights as a consequence of the PSI – admitting that, in hindsight, the implication of the debt restructuring had not been fully understood and anticipated – stakeholders representing the Greek banking sector, Greek Ministry of Finance, academia and the BoG pointed unanimously to political uncertainty as the principal factor for the drop in confidence between mid-2011 and mid-2012.

Another source of evidence that sheds some light on the effect of the PSI on market confidence and its impact on Greek banks is the credit ratings issued by the main agencies. The study team analysed the evolution of the credit ratings of the four largest Greek banks (Eurobank, NBG, Piraeus, Alfa Bank), corresponding to some 75 per cent of banking system assets at that time, including the interdependence of banks' rating on the Greek sovereign rating (Figure 3.14). The team also reviewed the underlying Moody's communications, focusing on specific references to PSI/debt-restructuring (see **Error! Reference source not found.** for a summary of this review).

Figure 3.14 Evolution of the ratings of the Greek sovereign and four largest Greek banks, Moody's



Source: ICF adapted from Moody's

Box 3.6 PSI and the Moody's ratings

From early 2011, the PSI started to feature in Moody's rating announcements and sector comments. In its downgrade of four main banks announced in March 2011, the agency rationale for the decision noted the possibility of debt restructuring, although it maintained that its central scenario was that holders of Greek government bonds will not bear the losses. That stance evolved with the subsequent downgrade of the banks in June 2011, with Moody's stating that the debt-restructuring was not 'inevitable'⁹¹. One month later, however, the haircut was assessed as *certain* (its magnitude was still unclear) and the risk of further impairment of GGBs on banks' capital base was one of the three⁹² main factors triggering another downgrade of the main banks in September 2011⁹³.

In its sector comment from January 2012, the agency had not yet pinned down the plausible level of haircut and contemplated three specific outcomes: (1) 50 per cent haircut on GGBs, (2) 60-70 per cent haircut on GGBs, and (3) a default and possible Euro-exit. Moody's saw outcome 1 as most desirable, with the potential impact of each varying substantially. Nevertheless, the agency hinted that '...there is widespread speculation that the final haircut could be higher than the 50 per cent initially envisaged' and highlighted some negative implications, e.g. the amount of capital injected would need to be higher and the likelihood that HFSF would retain its significant stake in Greek

⁹¹ Moody's, 3 June 2011. Moody's downgrades ratings of Greek banks and concludes review. Available at: https://www.moodys.com/research/Moodys-downgrades-the-ratings-of-Greek-banks-and-concludes-review--PR_220040

⁹² Along with (2) the expected impact of the deteriorating domestic economic environment on NPLs and potential additional provisioning costs from the upcoming diagnostic asset quality study, initiated by BoG and to be conducted by external consultants (BlackRock), (3) declines in deposit bases and still fragile liquidity positions, as illustrated by limited remaining eligible collateral for funding from the ECB and the recent activation of Emergency Liquidity Assistance (ELA) by the BoG.

⁹³ Moody's, 23 September 2011. Moody's downgrades the ratings of Greek banks, concluding review initiated 25 June 2011. Available at: https://www.moodys.com/research/Moodys-downgrades-the-ratings-of-Greek-banks-concluding-review-initiated--PR_226069

banks. Moody's suggested that it might even remain the sole shareholder for a longer period of time that *'...would make the banks less attractive for the private sector to invest in'*.

In its sector comment on 27 February 2012⁹⁴, Moody's finally anticipated a 53.5 per cent haircut, corresponding to nominal losses of EUR 25 bln. This turned out to be correct, although the agency argued that capital needs of banks would still exceed this amount, given rising NPLs and restructured loans, and record high unemployment. Importantly, Moody's pointed to the need for recapitalisation (taking place as soon as in 2012) to safeguard the solvency of banks and argued that the participation of existing banks' shareholders would be also necessary.

In the sector comment published on 5 March 2012⁹⁵ (three days before the exchange deadline for domestic creditors), the agency stressed that the ECB's temporary suspension of the eligibility of marketable debt instruments issued or fully guaranteed by Greece (C: no outlook) for use as collateral in Euro system monetary policy operations was partly driven by the launch of the PSI offer and highlighted that *'...there is a certain level of implementation risk contingent on the private-sector involvement acceptance by bondholders, which raises their funding risks'*. In parallel, Moody's highlighted a worryingly low level of deposits and asserted that *'...a further shock to depositor confidence could impair the banking system's capacity to perform its intermediation role'* – demonstrating the critically important role of expectations at that point.

Finally, some six weeks after the execution of the PSI, Moody's referred to HFSF's commitment of funds to the banks (through a formal assurance letter) as a *'positive credit development'* that ensured the restoration of the banks' battered solvency positions, even though banks continued to face significant risk⁹⁶.

When it comes to the relationship between banks' and the Greek sovereign rating, the former closely trailed the latter. This was because of banks' material exposure to GGBs and the possibility of lowering the Greek sovereign rating, prompting the agency to reassess the level of systemic support uplift (one of its ratings elements⁹⁷). The same logic applies to the upgrades. Indeed, the first upgrade of the Greek sovereign rating since the beginning of the crisis - in November 2013 - was driven by *'...a significant reduction of the government's interest burden following previous restructurings and official sector repayment assistance'*, and was followed by upgrades of three of the four systemic banks.

The impact of the PSI on credit ratings began to feature in Moody's ratings from early 2011, although it was first assessed as *'certain'* only in July 2011. The agency did not have clarity on its form and scope and continued to consider three widely different forms of debt restructuring as late as January 2012. In the short-term, either directly or indirectly (e.g. the PSI adding to the ECB's decision on the temporary suspension of the eligibility of GGBs as collateral in Euro system monetary policy operations in March 2012), the PSI contributed to the subsequent downgrades of the main Greek banks throughout 2011. Yet that negative

⁹⁴ Moody's, 27 February 2012. Larger haircut on Greek government bonds is credit negative for Greek banks. Available at: https://www.moodys.com/research/Larger-Haircut-on-Greek-Government-Bonds-Is-Credit-Negative-for--PBC_140153

⁹⁵ Moody's, 5 March 2012. Deposit declines and ECB's suspension of Greek bonds as collateral increase funding risks for Greek banks. Available at: https://www.moodys.com/research/Deposit-Declines-and-ECBs-Suspension-of-Greek-Bonds-as-Collateral--PBC_140335

⁹⁶ Moody's, 23 April 2012. HFSF's capital commitment to Greek banks is credit positive. Available at: https://www.moodys.com/research/HFSFs-Capital-Commitment-to-Greek-Banks-Is-Credit-Positive--PBC_141603

⁹⁷ In the case of Moody's ratings, a possible downgrade of the Greek sovereign rating could lead to a downward adjustment to the country's systemic support indicator (SSI) - the measure that Moody's used to determine a bank's rating uplift due to systemic support considerations.

impact was somehow offset by the prospect of recapitalisation, of which Moody's appeared to have little doubt. In the medium/long-term, however, the PSI could have some positive impact. This was because any uplift in the rating of the sovereign translated into an uplift of the banks' ratings, given their high exposure to the GGBs and Moody's methodology.

Finally, as the PSI itself, without being offset by the first recapitalisation, would have almost certainly resulted in a series of spectacular bank bankruptcies, it is only logical that market confidence in the solvency of the banks hinged on the assumption of the PSI being conditioned on the first recapitalisation. And if so, any failure to communicate the PSI conditioned on the subsequent capital injections in a swift and decisive manner would backfire with the immediate markets' reaction and further hit to the confidence that was already running low. As already mentioned, the first official announcement of the PSI was made in the July 2011 Euro Summit statement. And indeed, the explicit mentioning of '*recapitalisation of Greek banks*' appears in the statement twice⁹⁸, though one could wonder whether this could have been stressed in a firmer way⁹⁹.

In brief, the PSI contributed to the downgrades of Greek banks and affected market confidence in the short-term, even though some of that fall in confidence was unavoidable, given the nature of every debt restructuring operation. However, the data on the deposit outflows, yields and the uncertainty index suggests that political uncertainty combined with other factors, such as the deteriorating macro-environment and concerns about the quality of banks' loan books, had a greater impact on overall market confidence.

3.3.1.5 The possibility of an earlier PSI

The question of whether the PSI could have been negotiated and implemented earlier generated some controversy.

Firstly, there was a consensus that upfront debt restructuring was not feasible at the outset of the first EAP¹⁰⁰. There was a lack of political will to resort to debt restructuring, combined with some hopes that the programme itself would be enough to restore stability. For instance, the BoG's view - shared by the ECB - was that restructuring in 2010 was unnecessary because debt targets seemed feasible provided the adjustment programme was consistently implemented. Nor was it desirable, because it would have serious negative impacts on the assets of social security funds, the banking sector (including contagion to other Euro-zone members) and private investors in Greek government securities¹⁰¹. The potential moral hazard implied in debt-restructuring and sending the wrong signal to other EU Member States also played a role, so did the absence of the tools - the EFSF was still not in place. It is also plausible that it would have been impossible for the Greek banks' boards of directors to accept voluntary participation in a government bond exchange in 2010 and early 2011¹⁰².

The IMF country report from June 2013 emphasised that '*many commentators considered that the Greek programme would not stave off debt rescheduling or a default and that the level of public debt would remain high and would be aggravated by the severe recession,*

⁹⁸ Council of the European Union, 2011. Statement by the heads of state or government of the EU area and EU institutions, 21 July 2011. Available at: <https://www.consilium.europa.eu/media/21426/20110721-statement-by-the-heads-of-state-or-government-of-the-euro-area-and-eu-institutions-en.pdf>

⁹⁹ Whether the communication of the first bank recapitalisation was adequate and upfront is outside the scope of this study, though it would certainly merit detailed analysis.

¹⁰⁰ IMF, 2013. *Ex post evaluation of exceptional access under the 2010 stand-by arrangement*. IMF Country Report No. 13/156.

¹⁰¹ Bank of Greece, 2013. *The chronicles of the great crisis. The Bank of Greece: 2008-2013*. Available at: <https://www.bankofgreece.gr/Publications/Selections%20from%20The%20Chronicle%20of%20the%20great%20crisis%20-%20the%20Bank%20of%20Greece%202008-2013.pdf>

¹⁰² View supported by the stakeholders interviewed from the Bank of Greece.

while the non-concessionary interest rates on official debt worsened the debt dynamics'¹⁰³. In its evaluation of its own program, the IMF staff concluded that 'the delay of debt restructuring reduced private bond holdings subject to restructuring, as amortisation payments to the private sector amounted to about €50 billion during 2010–early 2012'¹⁰⁴.

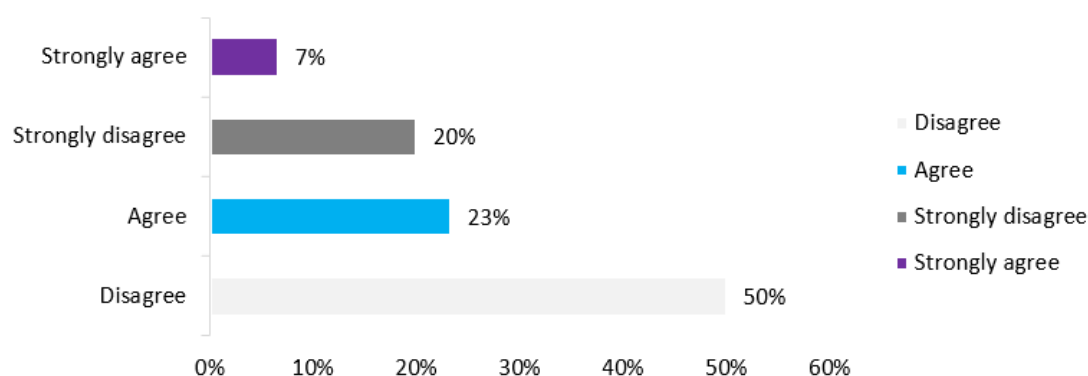
More generally, if the actual outcomes had been more in line with the early macroeconomic forecasts produced by the three institutions and Greek authorities, the PSI would not have been needed.

However, as time passed, it became increasingly evident that the PSI might happen. In theory, from a macroeconomic perspective, it would have been beneficial to front-load the PSI with the perception of markets restored earlier, more limited contribution to the currency re-domination fears, larger stock of debt available for the hair-cut and consequent sizable savings for the state stemming from the high cost of borrowing and debt servicing. One argument raised by a Greek stakeholder pointed to the high spread on GGBs (see Figure 3.13), suggesting that markets had been convinced and already priced in quite early on the possibility of some sort of debt restructuring.

Several interviewees based in Greece, as well as three stakeholders representing the European Commission and ESM, observed that earlier PSI would have been more optimal. A few argued that the timing of the PSI was to some extent to accommodate foreign banks offloading their Greek debt. The opposite view was also expressed, with one interviewee downplaying the likelihood of this, given other - and comparatively greater - drawbacks of a delayed debt-restructuring (e.g. costs related to the uncertainty that would eventually need to be borne by the Greek state and indirectly by the three institutions). Similarly, all staff interviewed from the European Commission pointed to additional considerations, such as the unprecedented scale and complexity of the PSI, lagging and highly uncertain data on key macroeconomic indicators that (retrospectively) did not capture the actual magnitude of the recession, and the considerable institutional effort and resources required by the first EAP.

70 per cent of Delphi panel experts who responded to the survey disagreed/strongly disagreed that the PSI was well timed.

Figure 3.15 Delphi survey – the extent to which you agree or disagree that the PSI was well-timed



Source: Delphi survey, N=30

¹⁰³ More detailed discussion is available in IMF (2013). Country Report No13/156, para 56 and 57. Available at: <https://www.imf.org/external/pubs/ft/scr/2013/cr13156.pdf> and IMF (2015). Blog – Greece: past critiques and the path forward, 5 July 2015. Available at: <https://blogs.imf.org/2015/07/09/greece-past-critiques-and-the-path-forward/>

¹⁰⁴ IMF, 2017. Greece: Ex post evaluation of exceptional access under the 2012 extended arrangement. Country Report No. 17/44.

3.3.1.6 Impact of the PSI on insurance companies and pension funds

Besides the losses of Greek banks from PSI, both pension funds and insurance companies also recorded significant losses due to their exposure to GGBs. Importantly, contrary to banks, pension funds' losses were not covered by the subsequent recapitalisations.

With respect to pension funds capital reserves management, according to laws No.1611/1950¹⁰⁵, No.2216/1994¹⁰⁶ and No.3586/2007¹⁰⁷ all the Greek pension funds are obliged to transfer to the BoG the remaining share of their capital beyond the level covering their current liabilities. These resources were deposited in an account in BoG and constitute the so-called "Common Capital" which is managed by the BoG on behalf of the pension funds. The management of the "Common Capital" by the BoG takes place within the framework of the law No.2469/1997,¹⁰⁸ according to which the Bank is obliged to invest the assets of the "Common Capital" exclusively in GGBs.

With triggering the Collective Action Clauses (CACs) under the PSI, all the GGBs in which pension funds invested through "Common Capital" were subject to the hair-cut. The face value (pre-PSI) of these bonds was around EUR 19.6 bln. From these EUR 19.6 bln, EUR 17.4 bln concerned GGBs under Greek Law and the remaining EUR 2.2 bln were GGBs under foreign Law.

Moreover, apart from the obligatory investments of their capital in GGBs, Greek pension funds had also voluntarily invested some additional capital in them. More specifically, some Greek pension funds, following decisions of their Boards of Directors, had invested (pre-PSI) an additional amount of EUR 6.3 bln in GGBs. There is no information available on the exact split of these GGBs under the Greek and foreign law(s). Nonetheless, some these GGBs under foreign law held by pension funds were subject to the hair-cut.

Thus, the total amount of capital that the Greek pension funds invested in GGBs and which subsequently participated in the PSI amounted to EUR 25.9 bln, of which EUR 19.6 bln from obligatory investment in GGBs, and the remaining EUR 6.3 bln in voluntary investment in GGBs (see Table 3.2).

Consequently, the Greek pension funds suffered significant losses as a result of the PSI. More specifically, the face value of GGBs under Greek law in which the pension funds had obligatorily invested amounted to EUR 10.1 bln (post-PSI) leading to the loss of EUR 7.3 bln. Also, the face value GGBs under foreign law, in which the pension funds had obligatorily invested shrank by further EUR 1.2 bln. Finally, pension funds had a loss of EUR 3.4 bln from their voluntary investment in GGBs. As a result, their total losses from the PSI amounted to EUR 11.9 bln¹⁰⁹.

Table 3.2 Face value of GGBs held by the Greek pension funds, before and after PSI (EUR bln)

	Value pre-PSI	Value post-PSI	Total loss
GGBs under Greek Law (obligatory investment)	17.4	10.1	7.3

¹⁰⁵ Law No.1611/1950, Government Gazette 304 A', 31/12/1950. Available at: http://www.kep.unipi.gr/wp-content/uploads/2017/11/1611_1950.pdf

¹⁰⁶ Law No.2216/1994, Government Gazette 83 A' 31/05/1994. Available at: <https://www.et.gr>

¹⁰⁷ Law No.3586/2007, Government Gazette 151 A' 10/07/2007. Available at: <http://www.ethe.org.gr/files/pdf/200771995227.pdf>

¹⁰⁸ Law No.2469/1997, Government Gazette 38 A' 14/03/1997. Available at: <https://www.et.gr>

¹⁰⁹ For all the above data see Bank of Greece note to the Ministry of Finance, with reference number 222, August 2nd, 2012. Available at: <https://www.tovima.gr/files/1/2012/09/04/PINAKES%20PSI.pdf>

	Value pre-PSI	Value post-PSI	Total loss
GGBs under foreign Law (obligatory investment)	2.2	1.0	1.2
GGBs (voluntary investment)	6.3	2.9	3.4
TOTAL	25.9	14.0	11.9

Source: Bank of Greece note to the Ministry of Finance, with reference number 222, August 2nd, 2012, available on-line: <https://www.tovima.gr/files/1/2012/09/04/PINAKES%20PSI.pdf>

Among 208 Greek pension funds that existed when the PSI took place, the funds with the greatest losses were the occupational fund for engineers and public works contractors (EUR 1.18 bln), the fund of commercial stores' employees (EUR 455.8 mln), the civil servants' supplementary insurance fund (EUR 378.8 mln), the pension fund of Athenian newspapers staff (EUR 342.1 mln) and the lawyers pension fund (EUR 320.1 mln).

On one hand, pension funds and other domestic bondholders suffered losses of around 65 per cent in the face value of their claims, whereas banks were fully compensated through the mechanism of bank recapitalisation. On the other hand, it is noted that the Greek Government borrowed EUR 4.5 bln in order to provide EFSF bonds to the pension funds as an offset for the reduction in their assets due to the PSI¹¹⁰. In addition, the Greek State has continued to provide grants to the pension funds on an annual basis. According to the Greek Government Budget for years 2011-2016, published by the Ministry of Finance, the grant component to pension funds from the State Budget during period 2009-2014 amounted to EUR 76.6 bln¹¹¹. Thus, while not in a straightforward sense as recapitalisation of banks, the Greek pension funds kept receiving a state support that helped to offset their PSI related losses from subsequent state grants.

Regarding insurance companies, it is noted that the BoG absorbed the supervision of the insurance sector in December 2010 and requested a technical assistance mission from the IMF¹¹². With respect to the market structure of the insurance companies sector, prior to the PSI it was characterized by a few large national companies, some subsidiaries of large international insurance companies, while a large number of very small insurers accounted for the rest of the sector. The insurance sector had already faced problems prior to the crisis with some insurance companies forced into administration. In addition, a number of insurance companies were part of the banking groups and when the banks became insolvent their insurance subsidiaries got into trouble too. More generally, for large international insurance companies, the issue of PSI effects was solved relatively early and did not have major impact on their solvency position. Furthermore, some of the largest national insurance companies got financing from banks, whereas many of the small insurance companies did not afford the losses and went liquidated.

Regarding the impact of the PSI on the insurance sector, Hellenic Association of Insurance Companies estimated the losses from the PSI in the range between EUR 2 bln and EUR 3 bln¹¹³. According to BoG's Annual Report for the year 2012, in order to counter the impact

¹¹⁰ See Bank of Greece, 2014. The Chronicle of the Great Crisis. The Bank of Greece 2008-2013, Centre for Culture, Research and Documentation. Available at: <http://www.setee.gr/images/pdf/ToXronikoKrisiTE.pdf>

¹¹¹ That is, EUR 12.872 bln in 2009, EUR 13.213 bln in 2010, EUR 14.759 bln in 2011, EUR 13.443 bln in 2012, EUR 11.631 bln in 2013, and EUR 10.444 bln in 2014.

¹¹² However, the request has to date not been followed-up.

¹¹³ The lower bound was referred in a speech by the President of the Hellenic Association of Insurance Companies during the 2013 Annual Meeting. Available at: <http://www.eaee.gr/cms/sites/default/files/teuxos43.pdf>

from PSI, insurance companies increased their capital by EUR 1.5 bln. In addition, in order to alleviate the impact of the PSI, insurance firms were granted from BoG a derogation in the valuation of GGBs and were allowed to gradually cover their losses by the end of 2013. Of the 55 Greek-based insurance companies, 23 made use of the derogation.

Finally, with respect to the effects of PSI in the insurance market, one interviewee representing a Greek regulatory authority, stated that when the PSI took place, insurance companies faced serious problems.

3.3.2 Effectiveness of the measures to stabilise the sector and individual banks

The following section addresses study question 3b.

Question 3b: How effective were the measures taken under the programme to stabilise the sector and the individual banks (e.g. recapitalisations, bank resolutions) and restore adequate capitalisation?

This section focuses on the recapitalisations and resolutions and specifically considers the following aspects:

- Design and implementation of the three recapitalisations and resolutions;
- Assessment of the effectiveness of the recapitalisations and resolutions in restoring adequate capitalisation.

3.3.2.1 Design and implementation of the three recapitalisations and resolutions

The first step to prepare the ground for all three recapitalisations and possible resolutions was the valuation of banks' assets and liabilities to estimate the funding gap at the level of an individual bank.

In June 2011, the BoG commissioned BlackRock to conduct an Asset Quality Review (AQR)¹¹⁴, a diagnostic study of Greek commercial banks' loan. The external consultants (BlackRock) were contracted to ensure the independence and transparency of the assessment. The exercise took into account the potential losses generated by the PSI, as well as potential losses on Greek banks' loan portfolios for the next three years, subject to a number of assumptions.

In March 2012, the BoG and HFSF finalised a strategic assessment¹¹⁵ of the banking sector focusing on the viability of banks and incorporating the inputs from the BlackRock study. The three institutions were closely involved in both exercises, although overall responsibility for the estimation of capital needs under this and subsequent recapitalisations lay with the national supervisors. The results of the assessment conducted by the BoG and HFSF were then reconciled with the results of the parallel analysis conducted by the ECB, resulting in a final estimation of the minimum capital needs for each

The upper bound was referred in 2017, in a speech from another HAIC president. Available at: <http://www.eaee.gr/cms/sites/default/files/teuxos48.pdf>

¹¹⁴ This diagnostic study was required under the June 2011 Memorandum of Economic and Financial Policies. It covered all banks (except cooperatives) and estimated the expected losses on banks' loan portfolios as of 30 June 2011, both over a three-year and a loan-lifetime horizon, on the basis of two scenarios, the baseline and the adverse scenario. The diagnostic study covered all loans carrying Greek risk and factored in possible changes in the key macroeconomic aggregates (e.g. GDP growth, unemployment, inflation, house prices).

¹¹⁵ The assessment used the criteria envisaged in the MoU 2012, including: (i) shareholders' soundness, (ii) quality of management and risk management system, (iii) capital, liquidity, and profitability metrics, (iv) BoG assigned ratings to bank risks, and (v) sustainable business model.

of the 18 banks assessed. Banks whose Core Tier 1 ratio fell below a minimum threshold were subject to the first recapitalisation/ resolutions¹¹⁶.

The strategic assessment of the BoG – that apart from BlackRock inputs included also contributions from the HFSF - identified four large and systemically important 'core banks', namely the National Bank of Greece, Eurobank, Alpha Bank and Piraeus Bank. These were to receive direct recapitalisation using programme funds, irrespective of the capital injected by private investors. All other 'non-core' banks were to be recapitalised entirely by the private sector by the end of April 2013. Otherwise, they would be resolved by the end of that year¹¹⁷ and the assets of resolved banks¹¹⁸ transferred to the four 'core banks', subject to negotiations involving BoG, HFSF and the representatives of those 'core banks'. The terms of the agreements for recapitalisation of each bank had to be approved by DG Competition, subject to compliance with the EU state aid and competition rules. Banks also had to agree restructuring plans with the European Commission¹¹⁹.

In short, the over-riding principle proposed by the three institutions and accepted by the Greek authorities that subsequently guided all recapitalisations and resolutions under the three EAPs was to maximise the involvement of private investors and minimise the control of the state over the recapitalised banks to ensure the business autonomy of banks *de jure* and *de facto*¹²⁰. This approach stemmed from a general mistrust of the state, given the government's mismanagement of the economy prior to the crisis. More specifically, the state (via HFSF) and private investors meant to buy shares in the recapitalised banks, and, under the first recapitalisation (given negative equity of banks), private investors would receive additional 'warrants'¹²¹ for each share they purchased. Those rights were - in principle - attractive for private investors because of the possibility the share price would increase above the 'exercise' price, should the banks recover. The difference between market price and the discounted 'exercise' price varied over time but were generally quite substantial¹²². An additional feature of the first recapitalisation was that if private investors could buy at least 10 per cent shares in a bank, then they could exert full control, despite the state (via HFSF) holding the majority of the shares. The only exception was in the case of major decisions, such as capital increases or mergers, which required state approval (via HFSF)¹²³.

¹¹⁶ European Commission, 2017. Coping with the international financial crisis at the national level in the European context. Available at: https://ec.europa.eu/info/publications/coping-international-financial-crisis-national-level-european-context_en

¹¹⁷ Bank of Greece, 2013. The Chronicles of the Great Crisis: Bank of Greece 2008-2013.

¹¹⁸ For commercial banks placed under resolution, the perimeter of the transferred assets and liabilities was selected on a case-by-case basis, focusing mainly on the 'healthy and viable' parts, including the loan portfolio. Cooperative banks, by contrast, only had their deposits transferred, due to the relatively low quality of their loan portfolios and the limited interest from bidders in acquiring additional assets.

¹¹⁹ World Bank, 2017. Bank resolution and bail-in in the EU: selected case studies pre and post BRRD. Available at: <http://documents.worldbank.org/curated/en/731351485375133455/pdf/112265-REVISED-PUBLIC-FinSAC-BRRD-CaseStudies.pdf>

¹²⁰ CADTM, 2017. Greece: PSI and process of bank recapitalisation (2012-2016).

¹²¹ Warrants are the rights to buy additional shares in the future at a prescribed 'exercise' price.

¹²² For instance, as part of the third recapitalisation, the new shares that were issued had a discount on the last quoted price, ranging from 34.4 per cent in the case of Alpha, to 80 and 93 per cent, respectively in the cases of Piraeus and NBG. See, for example, Macropolis, 2015. Greek banks complete building. Available at: <http://www.macropolis.gr/?i=portal.en.economy.3169>

¹²³ MIT, 2016. Beyond austerity – reforming Greece's economy.

This structure was unique, effectively cancelling out state control over the supported banks, despite it bearing most of the costs of restructuring and securing their capital. The design of the restructuring was made even more challenging by the critical role of private capital in a time when private investors had only limited appetite (especially during the first recapitalisation in 2013). Time was also of the essence, however. Delaying the recapitalisation exercise could hamper banks' ability to re-access the Eurosystem's regular monetary operations, while the recapitalisations and resolutions targeted no losses for depositors in order to avoid further deterioration of confidence¹²⁴, another element that guided (and constrained) the design.

Following the losses incurred from the PSI, the first recapitalisation was completed in June 2013. Given the expected losses stemming from the PSI, the initial financial envelope of EUR 10 bln devoted to the financial sector specifically under the first EAP was subsequently increased to EUR 50 bln earmarked under the second EAP. One half was allocated to offset the expected PSI-related losses, and the other half - equivalent to 5 per cent of the total assets in the system - was made available to resolve unviable banks and deal with the existing and future credit losses¹²⁵.

Banks were recapitalised with borrowing from the official sector during the second EAP 2012-2014. The HFSF funds injected into the banking system amounted to approximately EUR 25.5 bln, with private investors contributing another EUR 3.2 bln. More specifically, four 'core banks'¹²⁶ - considered by regulators as systemically important - were recapitalised, while most of the remaining banks were partitioned into 'good' and 'bad' banks, with their good parts sold to the four systemic banks. In parallel to the bank recapitalisation process, the resolution of the Greek insolvent banking system was also advanced, chiefly through implementation of the Resolution Law and the transfer of Cypriot bank branches to Piraeus Bank¹²⁷. The costs related to the resolution of banks covered by HFSF reached EUR 13.5 bln.

Overall, a total of EUR 38.9 bln in public funds were used for the first recapitalisation and the series of resolutions between 2011-2018. Box 3.7 provides an overview of both.

¹²⁴ Contrary to the approach undertaken in Cyprus in 2013.

¹²⁵ IMF, 2017. Greece: Ex-Post Evaluation of Exceptional Access Under the 2012 Extended Arrangement. Country Report No. 17/44

¹²⁶ Alpha Bank, Eurobank, National Bank of Greece (NBG) and Piraeus Bank.

¹²⁷ Bank of Greece, 2013. The Chronicles of the Great Crisis: Bank of Greece 2008-2013.

Box 3.7 First recapitalisation and resolutions

The first recapitalisation was the largest of three, with a total cost of EUR 28.6 bln and involving mostly public funds provided via HFSF (EUR 25.5 bln in the form of EFSF notes) and some private capital (EUR 3.1 bln). It focused on four large banks: Alpha Bank, Eurobank, National Bank of Greece (NBG) and Piraeus Bank. The distribution of capital losses for those four banks, corresponding to two main factors - the PSI and credit losses - are shown in 0 in section 3.3.1.3.

To mitigate the disincentives created by prevailing market conditions and uncertainty, and to minimise the losses to taxpayers, the recapitalisation featured, *inter alia*, warrants and the prospect of full control conditional on ≥ 10 per cent ownership (with the exception of certain key veto rights for public ownership).

Of the four large banks, three became fully controlled by private investors, while Eurobank remained in the state's hands, as the private sector was not willing to cover minimum 10 per cent of capital needs. HFSF became the majority shareholder in all four banks.

	Private capital raised (EUR bln)	State capital raised (EUR bln)	State stake after the first recapitalisation %
Alpha Bank	0.6	4.0	83.7
Eurobank	0	5.8	98.6
NBG	1.1	8.7	84.6
Piraeus Bank	1.4	6.4	78.3

Source: IMF 2013. Country Report No. 13/241

Resolution measures were implemented for the first time in the case of Proton Bank. Subsequently, at the end of 2011, the BoG decided to withdraw the authorisation of T Bank, followed by the resolution of the cooperative banks of Achaia, Lamia and Lesvos-Limnos in March 2012. 2013 saw the resolutions of ATE bank, TT Hellenic Postbank, FBB, Probank and the Cooperative Banks of Western Macedonia, Dodecanese and Evia. The costs of the resolution of those banks covered by HFSF reached EUR 13.5 bln¹²⁸.

The protracted and severe recession that continued in 2013 took a toll on banks' capital base, with the impairment levels of their loan books increasing and some banks experiencing knock-on effects from the financial crisis in Cyprus. This led the BoG to commission BlackRock to carry out an updated diagnostic study of the loan portfolios of all Greek commercial banks as of 30 June 2013. This study built on the earlier 2011 study and assessed banks' capital position vis-à-vis the minimum threshold of Core Tier 1 for the period June 2013-December 2016¹²⁹, allowing for estimates of the existence and size of a bank's capital gap, and related capital needs.

Consequently, the capital needs for all Greek commercial banks as part of the second recapitalisation were estimated by the BoG (with inputs from the BlackRock AQR) at EUR 6.4 bln. This was a fairly limited amount compared to the first recapitalisation. However, unlike the first recapitalisation, where the estimates of capital needs that bound the banks corresponded to an adverse scenario, the estimate of capital needs in the second recapitalisation reflected the baseline scenario, with the adverse scenario to be taken into account for future losses¹³⁰. This estimate assumed that Greek banks would return to profit

¹²⁸ Bank of Greece, 2013. The chronicles of the great crisis: Bank of Greece 2008-2013.

¹²⁹ Bank of Greece, 2013. The chronicles of the great crisis: Bank of Greece 2008-2013.

¹³⁰ European Commission (2017). Coping with the International Financial Crisis at the National Level in European Context. Available at:

in 2015. According to some press reports, this figure was viewed sceptically by IMF staff and the ECB, particularly given the rapidly increasing rate of NPLs^{131,132}.

However, in its review conducted in June 2014¹³³, IMF staff limited themselves to observing that the assumptions used by the BoG were 'optimistic' and likely to be at the 'low end' of actual requirements, while the ECB's Europe-wide stress tests covering 130 large banks conducted in October 2014 (following the second recapitalisation) stated that the four systemic banks did not require an additional infusion of capital. The fact that the second recapitalisation was fully covered by private funds, was another sign that the capital needs identified were considered credible also by private investors. Ultimately, it was the BoG's estimates that were used to pin down the level of capital needs for the banks. The BoG officially requested banks to submit their capital plans by mid-April 2014 to cover the identified capital gaps. This led to the second recapitalisation between May and June 2014¹³⁴. Box 3.8 provides an overview.

Box 3.8 Second recapitalisation

The total amount raised across the four banks was EUR 8.3 bln and involved exclusively private funds (mostly hedge funds), resulting in substantial increases in private ownership across the banks (including Eurobank).

	Private capital raised (EUR bln)	State stake <i>prior</i> the second recapitalisation (%)	State stake <i>after</i> the second recapitalisation (%)
Alpha Bank	1.20	81.7	69.6
Eurobank	2.86	95.2	35.4
NBG	2.50	84.4	57.2
Piraeus Bank	1.75	81.0	67.3

Source: MIT (2016). *Beyond Austerity – Reforming the Greek Economy*, BoG

Despite some economic stabilisation in 2014, the banking system remained precarious following the second recapitalisation, primarily because the portfolios of NPLs were sensitive to the protracted economic downturn. CET 1 capital rose only marginally as a result of the recapitalisation, from EUR 26.9 bln in December 2013 to EUR 28.6 bln in December 2014. This was largely due to two reasons: (i) increased provisions from projected losses on private loans that are normally taken away from capital; and (ii) a significant counterbalancing boost to the banks' regulatory capital in the form of deferred tax assets (DTA), which did not rely on future profitability as they could, under certain conditions, be converted into a receivable ("Tax Credit") from the Greek State¹³⁵. By

https://ec.europa.eu/info/publications/coping-international-financial-crisis-national-level-european-context_en

¹³¹ Financial Times, 24 February 2014. Greece in banking stand-off with bail-out leaders. Available at: <https://www.ft.com/content/90df6be6-9ca7-11e3-b535-00144feab7de?siteedition=uk>

¹³² For detailed description of assumptions underlying the estimation of capital needs under second recapitalisation see Bank of Greece, March 2014. 2013 Stress Tests of the Greek Banking Sector.

¹³³ IMF, June 2014. Country Report No. 14/151

¹³⁴ Bank of Greece, 2013. The chronicles of the great crisis: Bank of Greece 2008-2013

¹³⁵ The Greek authorities put in place in 2014 a regime which allowed credit institutions, under certain conditions, to convert large part of the deferred tax assets which have arisen from the substantial losses recorded from the increased provisioning of loans and the PSI losses, to a receivable ("Tax Credit") from the Greek State. Effectively, this has ensured

contrast, the results of the ECB comprehensive assessment of 130 European banks published in October 2014 revealed no further capital needs for the four Greek systemic banks.

2015 was meant to be a turning point for the sector, but the situation took an abrupt turn for the worse in January 2015, when the elections saw the coalition of SYRIZA and ANEL parties - that opposed the measures of the adjustment programmes - form a government. Prolonged negotiations with the three institutions in early 2015, coupled with rising uncertainty about the international support, doubts about Greece's solvency and - ultimately - its membership in the Euro zone, fuelled high uncertainty. This led to a rapid outflow of domestic deposits, reaching nearly EUR 50 bln between December 2014 and June 2015, a fall of almost one-quarter of total deposits over the period.

On 26 June 2015, the government announced a referendum on the new bailout programme, further denting confidence and renewing flights of private deposits. The ECB's rejection to increase the loan limit, given the cancellation of the ECB waiver for the use of GGBs as collateral by Greek banks in February 2015, led to the introduction of capital controls¹³⁶ and bank holiday in June-July 2015.

All of this, combined with the faltering economy and rising NPLs, called for yet another assessment of banks' capital needs. In August 2015, the ECB launched an AQR and stress-test exercise for the four systemic Greek banks, while the BoG undertook a similar exercise for the smaller banks. The result was the identification of capital needs under both a baseline and an adverse macroeconomic scenario. The capital needs for the four 'core banks' under the adverse scenario were estimated at EUR 9.6 bln. The total capital needs for all banks reached EUR 13.7 bln, of which EUR 3.7 bln was to be provided by private investors and conversion of debt into equity, with the remaining EUR 10 bln to come from public or private investors. Eventually, the banks managed to raise all of the required capital, with the majority coming from private investors, at the cost of a substantial dilution of HFSF shares. Box 3.9 provides an overview of that third recapitalisation.

Box 3.9 Third recapitalisation

The AQR required Greek banks to maintain a minimum CET 1 ratio of 9.5 per cent under the baseline scenario and 8 per cent under the adverse scenario. Senior bondholders were included in bail-in rules under a new recapitalisation law passed by the Greek parliament in October 2015.

The capital shortfall calculated by the ECB was less than expected, though NBG and Piraeus Bank – each of which had large books of mortgages and SME loans - faced disproportionately large shortfalls of some EUR 4 bln each¹³⁷.

Eventually, Eurobank and Alpha Bank raised all of the required capital from private investors. Together, all four banks raised EUR 5.6 bln from private investors and converted EUR 2.7 bln from voluntary liability management exchange of hybrid and subordinated capital instruments, as well as senior unsecured debt instruments. Therefore, EUR 8.3 bln of the required EUR 13.7 bln was raised from private sources, with the remaining EUR 5.4 bln injected into NBG and Piraeus Bank coming from the HFSF.

that a large part of the Greek banks' DTAs, known as Deferred Tax Credits (DTCs), did not rely on the banks' future profitability (the prospects of which were increasingly bleak), allowing them to count as regulatory capital.

¹³⁶ MIT, 2016. Beyond Austerity – Reforming Greece Economy.

¹³⁷ Euromoney, November 2015. Greek banks go for third lucky. Available at: <https://www.euromoney.com/article/b12kn44ggnp90x/greek-banks-go-for-third-time-lucky>

The bulk of the capital requirements contributed by the HFSF were met through contingent capital instruments (CoCos) that converts into ordinary shares if a bank's capital falls below certain level, rather than direct cash injections¹³⁸.

As a result of the third recapitalisation, the new shares issued for private investors had a discount on the last quoted price, ranging from 34.4 per cent in the case of Alpha, to 80 and 93 per cent, respectively, in the cases of Piraeus and NBG. The state's share was diluted and shrank dramatically, and the HFSF found itself with a minority holding in all four systemic banks¹³⁹.

	State stake <i>prior</i> to the third recapitalisation (%)	State stake <i>after</i> the third recapitalisation (%)
Alpha Bank	66.3	11
Eurobank	35.4	2.4
NBG	57.2	40.4
Piraeus Bank	66.9	26.4

Source: MIT (2016). *Beyond Austerity – Reforming the Greek Economy*; HFSF ECA (2017). *The Commission intervention in the Greek financial crisis*; World Bank (2016). *Bank Resolution and 'Bail-In' in the EU: Selected Case Studies Pre and Post BRRD*; Centre for International Governance Innovation (2016); EIU (2015).

In terms of resolutions, in 2015, two final banks (Panellinia Bank and Cooperative of Peloponnese) were resolved at the cost of nearly EUR 400 mln. More generally, the total resolution cost for the period 2011-2015 stood at EUR 15.1 bln, of which HFSF covered 13.4 bln. In all 14 Greek banks placed under resolution, shareholders were entirely written off. In some case with so significant losses that also resulted in high reluctance on behalf of foreign investors to invest again soon in the Greek banking system¹⁴⁰. In some banks - notably the cooperatives - shareholders whose stakes were written off were mainly retail investors. In two cases, subordinated debt was also wiped out¹⁴¹.

Regarding the framework for the resolutions, the existing rules were fairly general in 2011-2013 and allowed considerable flexibility in design. All resolutions over that time were implemented in line with Law 3601/2007 and Law 4021/2011¹⁴², and a separate Resolution Scheme set up within the Hellenic Deposit and Investment Guarantee Fund (HDIGF). The resolution framework was further strengthened¹⁴³, offering alternative resolution tools and providing for the financing of resolution measures through the HDIGF and the Hellenic

¹³⁸ Centre for International Governance Innovation, 2016. How the SYRIZA led government privatised Greek banks.

¹³⁹ The EIU, November 2015. Bank recapitalisation gets under way. Available at: <http://country.eiu.com/article.aspx?articleid=1193711503>

¹⁴⁰ Reuters, October 2012. CA takes EUR 2 bln hit from the sales of Emporiki. Available at: <https://www.reuters.com/article/us-cagricole-emporiki/credit-agricole-takes-2-billion-eur-hit-from-emporiki-sale-idUSBRE89G0AM20121017>

¹⁴¹ World Bank, 2016. Bank Resolution and Bail-In the EU. Selected studies pre and post BRRD

¹⁴² In October 2011, Law 4021/2011 amended Law 3601/2007, among other things with regard to bank resolution

¹⁴³ In more detail, Articles 9-11 of Law 4051/2012, amending the provisions of Law 3864/2010 establishing the Hellenic Financial Stability Fund (HFSF), Law 3601/2007 on capital adequacy of credit institutions and Law 3746/2009 on the Hellenic Deposit and Investment Guarantee Fund (HDIGF), along with the provisions of Law 4021/2011 on enhanced measures for the supervision and resolution of credit institutions.

Financial Stability Fund¹⁴⁴. In addition, compliance with the state aid rule was checked by the European Commission with a leading role of the DG Competition. The last resolution (Peloponnese Cooperative Bank) took place under much more detailed and tougher provisions of the Bank Recovery and Resolution Directive (BRRD)¹⁴⁵, as transposed by Law 4335/2015 in July 2015¹⁴⁶.

Until the end of 2015, two resolution tools were applied: the 'Sale of Business' tool was used in 12 cases, while 'bridge banks' was established twice (prior to the BRRD framework). The two bridge banks were under the control and management of HFSF, which acted as the sole shareholder of the banks (the new BRRD framework foresaw bridge banks managed by the resolution authority)¹⁴⁷.

Table 3.3 shows the total resolution costs for the Greek banks since the beginning of the crisis.

Table 3.3 Resolution costs for the Greek banks, 2011-2015

Bank	Date of resolution	Resolution tool	Acquirer	Resolution cost (EUR mln)
Proton Bank	9 October 2011	Bridge bank	-	1,112
T-Bank	7 December 2011	Sale of Business	Hellenic Post Bank	677
Cooper. Lesvou-Limnou	23 March 2012	Sale of Business	National Bank of Greece	56
Achaiki Cooperative	23 March 2012	Sale of Business	National Bank of Greece	209
Cooper. of Lamia	23 March 2012	Sale of Business	National Bank of Greece	55
ATE-Bank	27 March 2012	Sale of Business	Piraeus Bank	7,471
Hellenic Post Bank	18 January 2013	Bridge bank		3,733
First Business Bank	10 May 2013	Sale of Business	National Bank of Greece	457
Probank	26 July 2013	Sale of Business	National Bank of Greece	563
Cooper. of West. Macedonia	8 December 2013	Sale of Business	Alpha Bank	95
Cooperative of Evia	8 December 2013	Sale of Business	Alpha Bank	105

¹⁴⁴ Bank of Greece, 2013. The Chronicles of the great Crisis: Bank of Greece 2008-2013

¹⁴⁵ For instance, under the BRRD, junior bondholders and shareholders should normally face losses before taxpayers' money is injected into a bank (8 per cent of a failed bank's liabilities to be wiped out before public support is given). DG Comp can waive this requirement in certain circumstances when financial stability could be at risk — notably when the amount of public support required is relatively small and banks have already significantly reduced the shortfall by securing private investment.

¹⁴⁶ World Bank, 2016. Bank Resolution and Bail-In the EU. Selected studies pre and post BRRD.

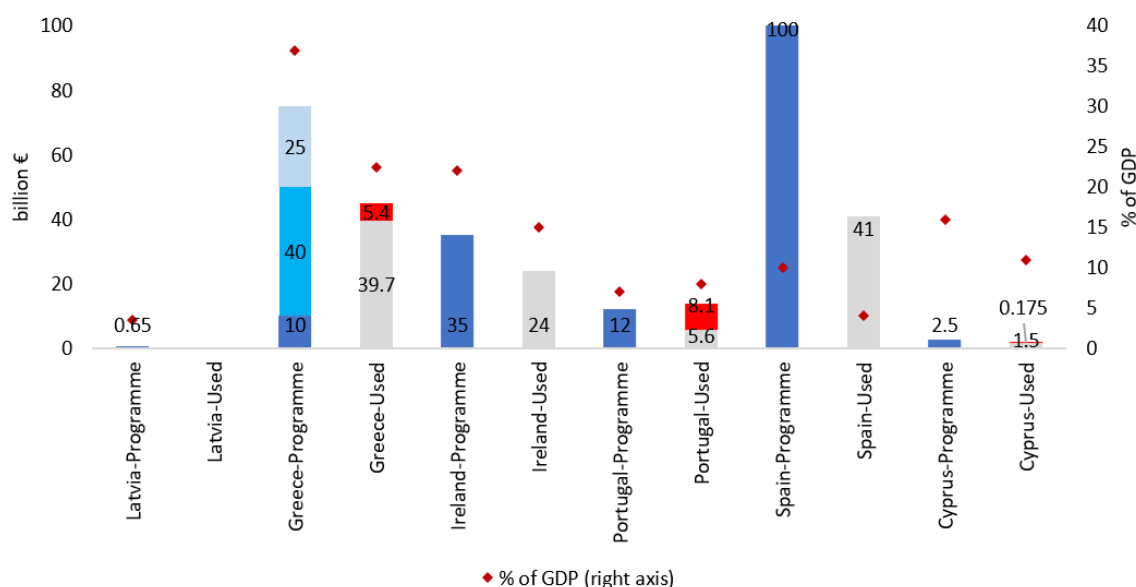
¹⁴⁷ Ibidem

Bank	Date of resolution	Resolution tool	Acquirer	Resolution cost (EUR mln)
Cooperative of Dodecanisou	8 December 2013	Sale of Business	Alpha Bank	259
Panellinia Bank	17 April 2015	Sale of Business	Piraeus Bank	297
Cooperative of Peloponnese	18 December 2015	Sale of Business	National Bank of Greece	93
TOTAL				15,191

Source: BoG

Regarding the size of the financial envelopes under the three EAPs devoted to the financial sector specifically, EUR 10 bln under the first EAP was assigned initially to deal with potential capital shortfalls, of which EUR 5 bln was estimated to cover the banks' losses while the remaining EUR 5 bln was meant to constitute a buffer. However, given the expected losses related to the PSI and continuous increase in NPLs, the envelope was subsequently increased to EUR 50 bln under the second EAP. Of the EUR 50 bln earmarked under the second EAP for banks' recapitalisation and resolution, half was allocated to offset the expected PSI-related losses, and the other half to resolve unviable banks and tackle the existing and future credit losses¹⁴⁸. Under the third EAP, an additional buffer of EUR 25 bln was envisaged for bank recapitalisation and resolutions. All in all, while the initial envelope of EUR 10 bln under the first EAP turned out to be eventually insufficient given subsequent PSI and credit losses, the size of financial envelopes under the second and third EAP were appropriate. Of EUR 75 bln assigned for financial sector envelope in Greece that corresponded to nearly 40 per cent of Greek GDP, EUR 45.1 bln, or 60 per cent of the available envelope, was eventually used (Figure 3.16).

Figure 3.16 Public funding foreseen and used in the banking sector



Source: European Commission

Note: GDP share for the respective countries corresponds to the GDP share as of the second year of a given program e.g. GDP as of 2011 for Greece.

¹⁴⁸ IMF, 2017. Greece: Ex-Post Evaluation of Exceptional Access Under the 2012 Extended Arrangement. Country Report No. 17/44

Overall, as a result of subsequent recapitalisations and resolutions, the Greek banking system experienced one of the largest restructuring and consolidation processes in Europe. The number of banks with Greek banking authorisation in 2008 shrank from 36 to 18 by the end of 2015, and to 15 by the end of 2018. The total number of branches fell from 3,750 in 2008 to around 1,979 in 2018, while the total number of employees in the banking sector declined from nearly 70,000 in 2008 to around 39,820 in 2018. Market share of the four systemic banks (in terms of assets' share) increased substantially and reached 94 per cent in 2018 (compared to 70 per cent in 2008), one of the highest concentrations in the EU. Foreign banks have an insignificant market share, with all but one foreign retail banks having divested from Greece¹⁴⁹.

3.3.2.2 Assessment of the effectiveness of recapitalisation and resolution in restoring adequate capitalisation

The effectiveness of the recapitalisations and resolutions in restoring adequate capitalisation of Greek banks can be assessed on a number of criteria, including:

- Whether the approach to recapitalisation and resolution was adequate and the assessment of capital needs was sufficiently prudent;
- Whether banks' capital bases were restored as a result of recapitalisation and resolution;
- Whether one of the overarching objectives of the restructuring process to protect the private depositors and to minimise market disruption was met;
- Whether recapitalisation and resolution were completed with the minimum cost to the state and maximum involvement of the private sector.

Adequacy of the approaches to recapitalisations and resolutions and the assessment of capital

Placing credit institutions on a sound footing following either individual or systemic financial turbulences is a complex and pressing task.¹⁵⁰ Given the scale and the context of the task of restoring the adequate capitalisation of banks in the Greek context faced by the authorities and the three institutions, the task was exceptionally challenging.

The literature and views of the interviewees all pointed to the high degree of fragmentation and some capacity surplus in the Greek banking system in the aftermath of the crisis, with some banks insufficiently sound or properly managed to warrant their operating in a well-functioning and competitive market¹⁵¹. The Greek authorities and the three institutions agreed an approach¹⁵² to restructuring the Greek banking system that hinged on the safeguarding of four systemically important 'core banks' with viable business models and a track record of successful provision of critical services. All other banks were still offered the time to raise the necessary private capital. As a result, the weakest and poorly managed banks would be closed so that only sufficiently sound operations would get state support.

An outcome of the approach to anchor the first recapitalisation in the four 'core banks' was a high concentration in the banking sector following the recapitalisations. With hindsight,

¹⁴⁹ HBA, 2019. Greece banking sector: facts and figures. Available at: <https://www.ebf.eu/greece/>

¹⁵⁰ European Commission, 2017. Coping with the international financial crisis at the national level I a European context. Available at: https://ec.europa.eu/info/publications/coping-international-financial-crisis-national-level-european-context_en

¹⁵¹ See for instance, Bank of Greece, 2014. Chronicles of the Great Crisis: the Bank of Greece 2008-2013.

¹⁵² The features of the strategic (viability) assessment of the BoG incorporated in the March 2012 MoU was part of it

however, the selection of these four banks and overall approach was indeed appropriate. Four 'core banks' accounted for a large share of the market and their robustness translated into the robustness of the whole system. Also, given their market share at the time (the fifth largest bank was significantly smaller than any of the four 'core banks', had a weak capital base and its management had raised concerns), the inclusion of any additional banks could not be rationalised. Virtually all banks turned out to be insolvent after the PSI, and lack of prioritisation in the restructuring would have made the process even more complex and (possibly) costly. In addition, the threshold was not simply based on size but, rather, on the magnitude of the state aid required and the potential for the given bank to divest non-core assets, restructure its business model and return to viability. The appropriateness of the overall approach was almost unanimously supported by the interviewees across all consulted organisations.

The ECA evaluation¹⁵³ found that the viability assessment through which the BoG selected four systemic 'core banks' and then assessed the remaining domestic banks for viability and thus eligibility for the first recapitalisation using programme funds was not sufficiently transparent (although there was no condition on this in the programme and the choice of process was a matter under the national supervisory authority's discretion). Two interviewees agreed with this assessment but the limited budget of this study prevented further examination.

In terms of the framework guiding the design, at the time the first recapitalisation and resolution was conceptualised and implemented, principles/guidelines/resolution tools were substantially less developed than at the time of the third recapitalisation given the absence of the comprehensive EU framework established by the Bank Recovery and Resolution Directive (BRRD). The key laws guiding the first recapitalisation were based on HFSF Law 3864/2010 and its subsequent amendments through Laws 4111/2013, 4138/2013, 4144/2013 and 4152/2013¹⁵⁴. By the time the third recapitalisation was designed and implemented, more specific state aid guidelines were in place, along with the BRRD. While the lack of comprehensive guidelines and resolution tools during the first and second recapitalisations did not offer the authorities and the institutions a clear path on how to proceed, interviewees from the EC, HFSF and BoG who were directly involved in the restructuring process acknowledged that this allowed considerable flexibility in designing the first and second recapitalisations and resolutions, something that would not have been possible once more specific and stringent provisions were introduced, including those under the BRRD.

Furthermore, unlike in other program countries, the Greek banking sector went through three recapitalisations rather than one before adequate capitalisation was eventually restored. This may raise the question whether the capital needs were underestimated.

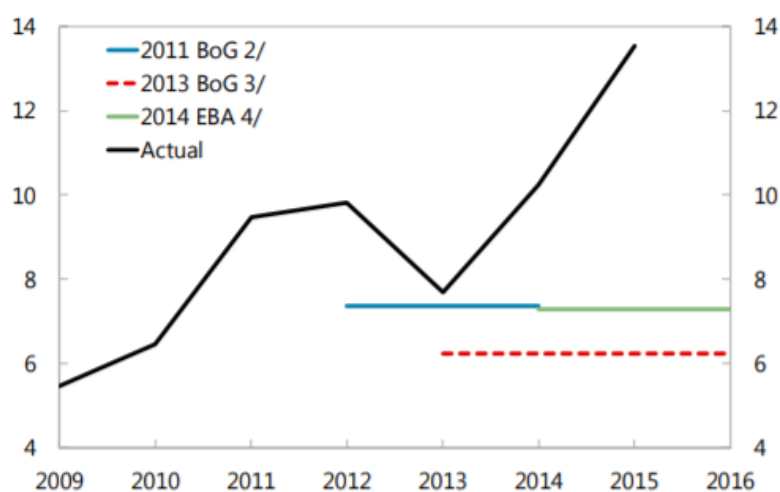
The IMF evaluation of its 2012 Extended Arrangement stated that: *'With the benefit of hindsight, the programme could have done more to address several potential vulnerabilities in a timely manner. Bank capital needs assessment exercises could have used more conservative estimates for the scale and severity of credit losses, reducing the need for subsequent recapitalisations'*¹⁵⁵. The suggestion that insufficiently prudent assumptions were used for capital needs under the first two recapitalisations because of available funding was also highlighted by the ECA evaluation. Figure 3.17 shows the discrepancies between some BoG and EBA projections and actual outcomes.

¹⁵³ European Court of Auditors. The Commission's intervention in the Greek financial crisis. SR 17.

¹⁵⁴ HFSF, 2013. Report of the HFSF. Available at: http://www.hfsf.gr/files/HFSF_activities_Jan_2013_Jun_2013_en.pdf

¹⁵⁵ IMF, 2017. Greece: Ex-Post Evaluation of Exceptional Access Under the 2012 Extended Arrangement. Country Report No. 17/44

Figure 3.17 Greek banking system impairment charges, in EUR bln



Source: Bank of Greece; European Banking Authority; SNL; and IMF staff calculations

Notes: 1: Does not include impairments related to losses on Greek debt holdings under the PSI scheme; 2: Annualised unprovisioned credit losses projected by the Bank of Greece in 2012 capital needs assessment (based on end-2011 data), 3: Annualised unprovisioned credit losses projected by the Bank of Greece in 2014 stress test for the period from end-June 2013 to end-2016 (based on end-June 2013 data), 4: 2014 EBA stress tests projected cumulative impairments under the adverse scenario for 2014-2016 period, annualised (based on end-2013 data)

One relevant aspect is the approach to the analysis of the capital needs, led by BoG. While the direct impact of the PSI was relatively straightforward to estimate (see Section 3.3.1.3), estimations of the credit loss projections for banks - the key parameter feeding into the derivation of the final capital needs at bank level - were commissioned from an external consulting firm of recognised standing (BlackRock), as ensuring the independence and transparency of the estimates was, rightly, of paramount importance.

Nevertheless, there were some material differences in views between the authorities and the three institutions on the estimates of capital needs, in particular for the second recapitalisation (see 3.3.2.1), causing some delays and increasing uncertainty over the appropriate course of action¹⁵⁶. One interviewee pointed out that the consistently thin capital base of banks curtailed incentives to resolve the NPL issue (write-off of an NPL backfires in the reduction of a bank's capital base), and consequently, to lend to the real economy.

Almost all of the stakeholders interviewed here believe that the consistent underestimation of the length and magnitude of the recession (including the three institutions' own projections - see Figure 3.2) was a root cause and major flaw of the assessment of the banks' capital needs. While there was consensus that macroeconomic uncertainty and consistent shortfalls in expectations for economic recovery during the first two programmes intensified the challenges (e.g. persisting NPLs) faced by the financial sector experts in assessing capital adequacy, the impact can be viewed as two-way. Looming financial sector uncertainty led to a longer and deeper than expected credit contraction, which in turn hampered the prospects for economic recovery through investments enhancing a swift reallocation of resources. In addition, overly optimistic views of the real value of collateral underpinning bank loans' and major obstacles in addressing NPL issues swiftly and effectively (see Section 3.4) were also highlighted by some interviewees.

Finally, while the Greek banking sector was subject to three recapitalisation exercises, it is only fair to consider whether the authorities and institutions could have reasonably

¹⁵⁶ See for instance: Financial Times, 24th February 2014. Greece in banking sector stand-off with bail-out lenders. Available at: <https://www.ft.com/content/90df6be6-9ca7-11e3-b535-00144feab7de>

anticipated some key factors that eventually determined the banks' capital needs. It seems that exogenous shock, in the form of uncertainty brought by the prospect of early elections in late 2014, and the subsequent formation of the government led by radical left SYRIZA in January 2015, with all the attendant implications - including deposits outflows triggered by Grexit fears - could hardly have been foreseen when assessing capital needs under the second recapitalisation. In short, it is conceivable, that a third recapitalisation would not have been necessary had Greece not experienced political turmoil in 2015. The Greek economy was on the recovery path in the first half of 2014, while the political crisis that started in December 2014 and unfolded in the first half of 2015 did not allow the programme to be closed and led to freezing of ELA, imposition of bank holidays followed by capital controls, and massive deposit outflows. This hypothesis has been supported by interviewed BoG and ESM stakeholders, who also cited the results of the ECB Europe-wide stress tests conducted in October 2014. European Commission staff expressed less certainty that the third recapitalisation could have been avoided had there not been political turbulence in 2015, but noted that the capital injection could have been smaller and executed solely with the private sources.

Restoration of banks' capital bases as a result of recapitalisation and resolution

As a result of the PSI, the capital base of most of the Greek banks was entirely wiped out in 2012, while the protracted – and unprecedented - recession fuelling the rise in NPLs and Grexit fears continued to erode banks' capital bases in the following years.

Despite this challenging (and continuously uncertain) backdrop, the financial stability of the system was preserved, with 14 credit institutions resolved and four systemically important banks recapitalised. This was effected without the major disruption that would have been caused by disorderly bankruptcies or market jitteriness due to poor design or lack of swift and transparent implementation (even though one must also acknowledge that that during several years banks served the purpose of a funding instrument towards the real economy to limited extent only). This should be recognised as a major achievement, despite banks' ongoing vulnerability.

Three rounds of recapitalisation with capital injections reaching EUR 68 bln (or EUR 85 bln including deferred tax credits) kept the CET 1 capital adequacy ratio above the minimum threshold (Figure 3.18). The uplift in the CET 1 was particularly crucial under the first recapitalisation, where the ratio of two out of four systemic banks was negative¹⁵⁷. Following the third recapitalisation, the CET 1 capital adequacy ratio reached circa 15 per cent by December 2015¹⁵⁸. More recently, the CET 1 ratio rose to 15.8 per cent in 2018, compared to 14.4 per cent for the Eurozone average¹⁵⁹. The EU-wide stress tests conducted by the EBA in 2018¹⁶⁰ showed that Greek banks kept buffers at a sufficient level to absorb additional credit losses.

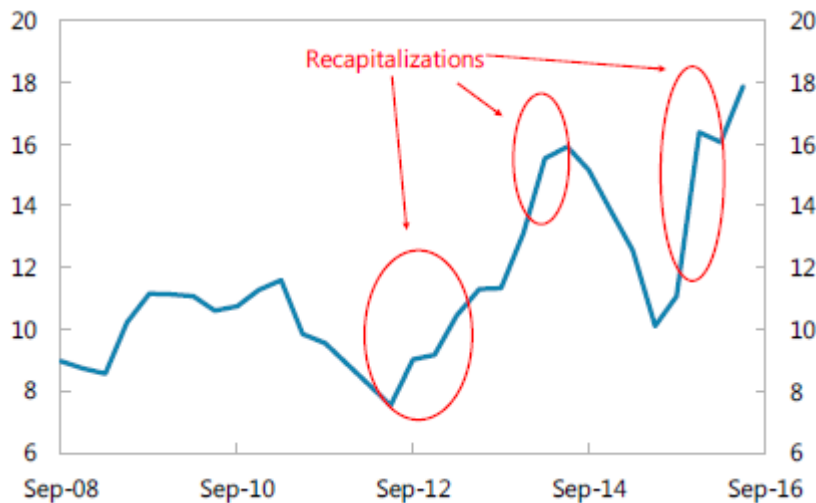
¹⁵⁷ As of December 2011, the CET 1 capital ratio of NBG and Piraeus Bank were -2.8 and -7.3 per cent, respectively, while those of Alpha Bank and Eurobank stood at 8.1 and 12.4 per cent, respectively. (Data as per financial statements published by all four banks.)

¹⁵⁸ IMF, 2017. *Ex post* evaluation of EEF programme. Available at: <https://www.imf.org/en/Publications/CR/Issues/2017/02/07/Greece-Ex-Post-Evaluation-of-Exceptional-Access-Under-the-2012-Extended-Arrangement-Press-44636>

¹⁵⁹ EBA, 2018. EU-wide stress-tests. Available at: <https://eba.europa.eu/eba-publishes-2018-eu-wide-stress-test-results>

¹⁶⁰ EBA, 2018. EU-wide stress-tests. Available at: <https://eba.europa.eu/eba-publishes-2018-eu-wide-stress-test-results>

Figure 3.18 CET 1 capital ratio of the Greek banking system, in %



Source: IMF calculation

Banks' liquidity also improved, limiting their dependence on BoG funding, they regained access to the interbank market, started issuing securitisations and covered bonds, and, by 2018, three out of four 'core banks' were assigned an investment grade rating¹⁶¹. However, while the stability of the system was restored, banks' profitability remained weak, consumer deposits increased only marginally between the end of 2015 and 2018, credit supply was feeble, with loan rates to NFCs around 2 percentage points higher than similar Eurozone loans¹⁶², and NPLs remained extremely high (49 per cent as of March 2018) remaining a critical unresolved issues since the beginning of the crisis.

It should be noted that the recapitalisations raised the private capital needed, despite an exceptionally challenging environment. According to the IMF, the private sector participation in the first recapitalisation was stronger than envisaged¹⁶³. The second recapitalisation took place with entirely private funds, while the participation of private investors in the third recapitalisation was in line with expectations. Had it been otherwise, the size of the state's injections could have been higher, increasing the final bill and complicating subsequent privatisation. In an extreme scenario, with no HFSF in place and little private interest, the Ministry of Finance might have needed to take on the shares, without the framework, enough expertise and inclination to interfere in the functioning of banks, ultimately possibly leading to higher costs borne by Greek taxpayers.

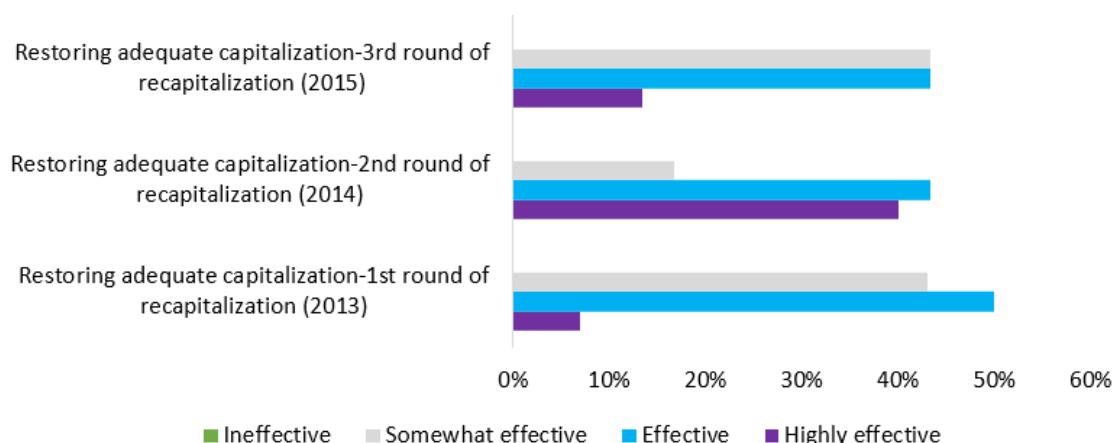
Delphi survey results show that more than 50 per cent of respondents viewed each of the three capitalisations as effective/very effective, with the share highest for the second recapitalisation. None of the respondents perceived the recapitalisations as ineffective.

¹⁶¹ BIS, 2018. Yannis Stouraras: Lessons from the financial crisis and challenges for the Greek banking sector. Available at: <https://www.bis.org/review/r181114d.htm>

¹⁶² ESM, 2020. Restoring growth and financial stability: how Greek banks responded. Available at: <https://www.esm.europa.eu/publications/restoring-growth-and-financial-stability-how-greek-banks-contributed>

¹⁶³ IMF, July 2013. Greece Country Report No. 13/241.

Figure 3.19 Delphi survey – effectiveness of recapitalisations in restoring adequate capitalisation of Greek banks



Source: Delphi survey, N=30

Among the respondents who perceived one or more recapitalisations as somewhat effective, justifications were typically that:

- Three recapitalisations took place, suggesting that the first two fell short of solving the problem, although the third was largely a consequence of domestic political upheaval and rising Grexit fears;
- Recapitalisation did not restore adequate capitalisation, as the issue of NPLs was not resolved;
- The political need to constrain the use of official money led to too-modest capital injections vis-à-vis the needs of banks.

Protection of private depositors

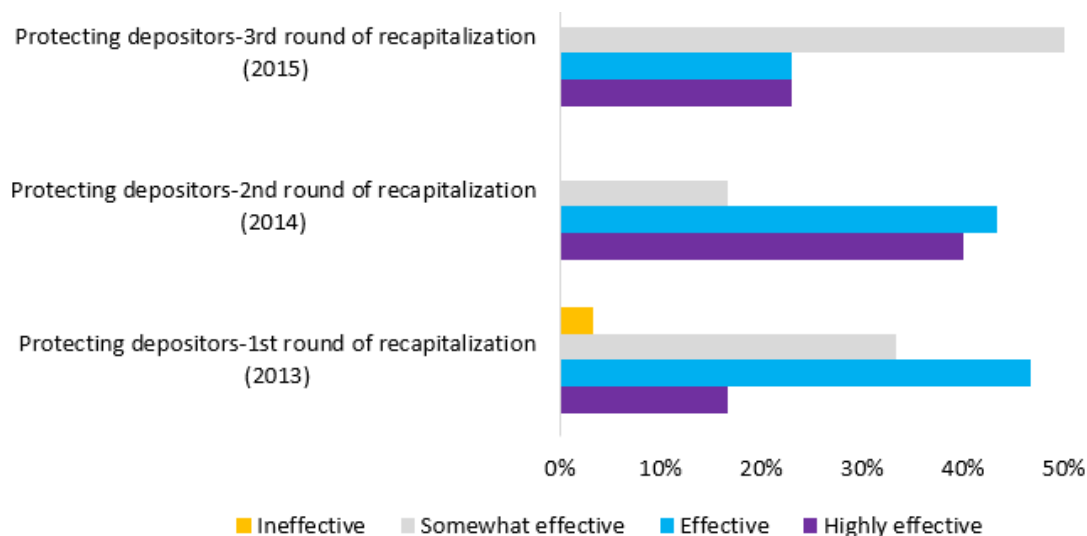
Throughout the 2010-2015 period, high uncertainty and the outflows of deposits continued to erode banks' capital bases, widening the gap between the funding needed to restore the stability of the system and the funding available. In that context, applying a haircut to private depositors was one potential option. In fact, that option was used in the restructuring of the banking sector in Cyprus, where uninsured depositors suffered losses of EUR 4 bln that, in turn, increased the share of strategic defaulters in NPLs, reduced confidence, and created a general perception of unfairness of burden-sharing¹⁶⁴.

However, in the Greek context, all of the individual depositors were preserved, irrespective of their size and type. Five years after the last recapitalisation, it is easy to see this as a fairly obvious outcome, given the central role of uncertainty and deposits outflows. However, the pressure to minimise the costs of restructuring had to be reconciled with the detrimental effect on banks' capital bases as a result of continuous underestimating of the length and magnitude of the recession that in turn had detrimental effect on banks' capital base. The decision to stick to the policy decision to fully protect depositors while resolving 14 non-viable banks and recapitalising four others was not an easy one and should not be taken for granted.

According to Delphi survey respondents, all three recapitalisations were effective overall in protecting depositors. The combined share of respondents who stated that the recapitalisation was effective/highly effective was lowest for the third recapitalisation (46 per cent).

¹⁶⁴ European Commission, 2019. Ex-post evaluation of the Economic Adjustment Program: Cyprus 2013-2016.

Figure 3.20 Delphi survey – effectiveness of recapitalisations in protecting depositors



Source: Delphi survey, N=30

Costs of recapitalisation and resolution

In line with the principle to maximise the contribution of private investors to recapitalised banks, the design of the first recapitalisation relied, inter alia, on the use of warrants as an additional incentive to private capital, given the negative equity of the banks in question.

According to the ECA evaluation of the first two EAPs¹⁶⁵, in the context of the first bank recapitalisation, the Greek authorities opted for warrants without comprehensively identifying some of the associated risks, e.g. their potential impact on bank share prices. The ECA assessed the form of warrants as 'excessive'.

Yet, some literature notes that this state subsidy was necessary because of high uncertainty and the insolvency of Greek banks¹⁶⁶. Foreign investors were shying away from Greek assets, while the capacity of domestic investors was limited. In addition, judging by the size of the capital injection from the private sector (EUR 3.1 bln) versus the state/HFSF (EUR 25.5 bln), use of warrants does not seem to have translated into private investors flocking in to buy banks' shares. More generally, stakeholders across all institutions, including those directly involved in the process of restructuring banks, agreed that gauging the level of private demand - in particular at the outset of the first recapitalisation - was an inherently difficult exercise. An interview with representatives of three institutions who were directly involved in the process stated that the goal to maximise the involvement of private shareholders was driven by the fact that the institutions had anticipated that more stress tests would be needed, with the possibility of further recapitalisations. Limiting state involvement was therefore a way of preserving state funds.

Restructuring the Greek banks came at a very high cost. Under the third recapitalisation, the choice of recapitalisation with no effective minimum price set succeeded in minimising new taxpayer funding at the cost of complete dilution of the Greek taxpayers' existing stake in the four systemic banks. The EUR 25.5 bln injected by HFSF in banks in May 2013 had already shrunk significantly ahead of the third recapitalisation, with Grexit fears triggering deposit outflows of EUR 45 bln between June 2013 and June 2015 (a decrease of 26 per cent) and a sharp increase in NPLs to EUR 107 bln (55 per cent of GDP) by June 2015. Valued at the share prices of the 2014 recapitalisation, the HFSF's stake in the four banks was worth EUR 18.5 billion in the spring of 2014. By the end of the year, after

¹⁶⁵ European Court of Auditors, 2017. The Commission's intervention in the Greek financial crisis.

¹⁶⁶ MIT, 2016. Beyond Austerity – Reforming Greece Economy.

SYRIZA called for snap elections, the value of the HFSF's stake had fallen to EUR 11.6 bln. Following lengthy negotiations with creditors after SYRIZA won the January 2015 elections, the share value fell further to EUR 7.5 bln by June 2015, when capital controls were imposed. By that time, private investors had also incurred large losses. Finally, valued at the price of the third recapitalisation, in November 2015, the shares acquired in 2013 were worth EUR 747 mln, dramatically reducing the state's holding in each of four banks. For instance, the HFSF ownership in Alpha Bank decreased from 83.7 per cent in 2013 to 11 per cent in 2015, while those in Eurobank fell from 95.2 per cent to just 2.4 per cent.

Overall, given the negative equity of virtually all banks following the PSI, it was well understood that the state would need to incur losses to attract private investors. The second recapitalisation took place using entirely private funds. The ongoing recession, Grexit fears and the resulting deposit outflows saw both the state and private investors absorb large losses until the third recapitalisation. For some interviewees, however, the dilution of the state's stake came at too high a price. A similar perspective can be found in some of the literature. According to the Centre for International Governance Innovation, the third recapitalisation of Greek banks using a greater amount of public funds and/or contingent capital instruments that reduced the possibility of new share issuance, would have limited the dilution of HFSF's existing shares – and ultimately reduced the losses for Greek taxpayers¹⁶⁷.

3.4 Non-Performing Loans (NPLs)

3.4.1 Most important reasons behind the large and persistent increase in NPLs in Greece

The following section addresses study question 4a.

Question 4a: What were the most important reasons behind the large and persistent increase in NPLs in Greece?

3.4.1.1 Main reasons behind the large and persistent NPLs in Greece

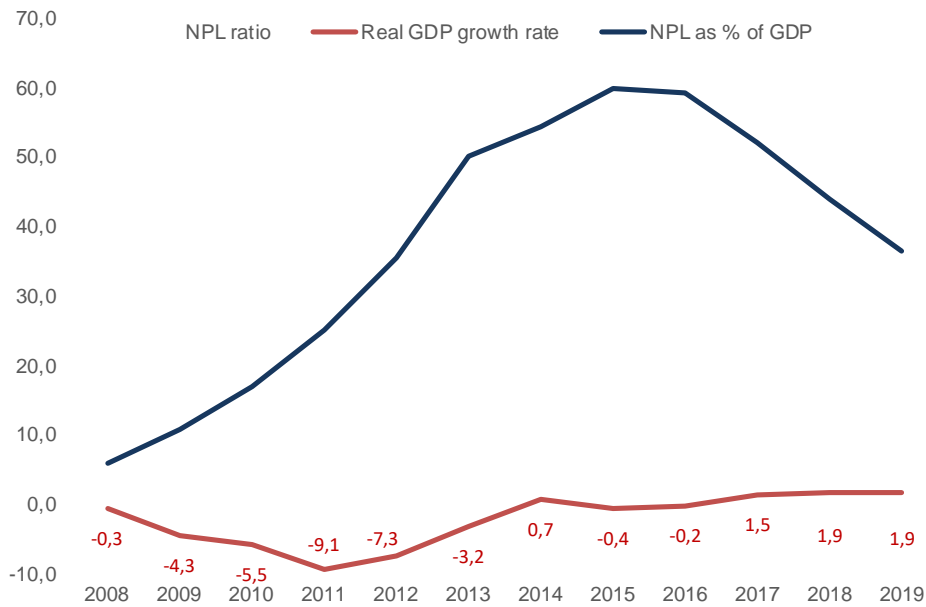
As the crisis unfolded, there was a sharp deterioration in the quality of the Greek banks' loan books. The share of non-performing to total loans increased by 43 per cent from 5.7 per cent at the end of 2008 to 48.5 per cent at the end of 2016 (Figure 3.21). The absolute value of NPLs peaked at EUR 106.5 bln at the end of 2015, representing 60 per cent of GDP. By way of context, in about 70 per cent of crises in high-income countries, peak NPLs never rose above 20 per cent of total loans outstanding and the 11 per cent median-value of peak NPLs¹⁶⁸. In Greece, NPLs peaked at 49 per cent of total loans outstanding in 2016 (BoG data) and 41.3 per cent in 2017 (ECB data)¹⁶⁹.

¹⁶⁷ Centre for International Governance Innovation, 2016. How the SYRIZA led government privatised Greek banks. Available at: <https://www.cigionline.org/articles/how-syriza-led-government-privatized-greek-banks>

¹⁶⁸ Laeven and Valencia (2018) Systemic Banking Crises Revisited

¹⁶⁹ The data from ECB are on a consolidated bank group level, i.e. it includes bank subsidiaries (banks abroad, leasing/factoring companies domestically), whereas BoG data is on the individual bank level. Moreover, the data from ECB include all debt instruments, whereas BoG data concern loans only. Both data series are accurate, BoG series is used for NPL monitoring targets set for Greece, but for the purposes of cross-country comparisons ECB data are more appropriate.

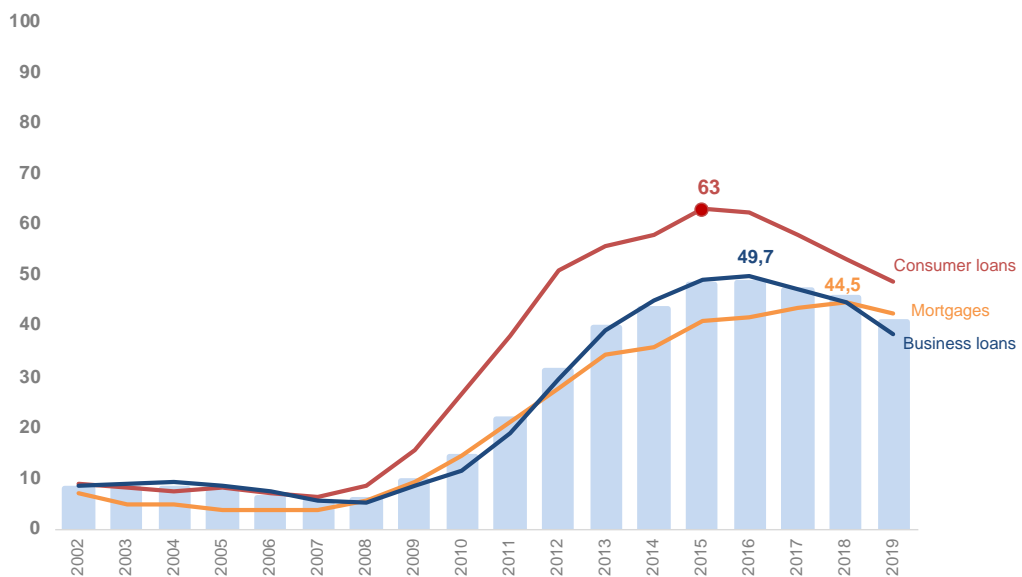
Figure 3.21 Evolution of NPL ratio, Real GDP and NPL as % of GDP



Source: Bank of Greece, Eurostat

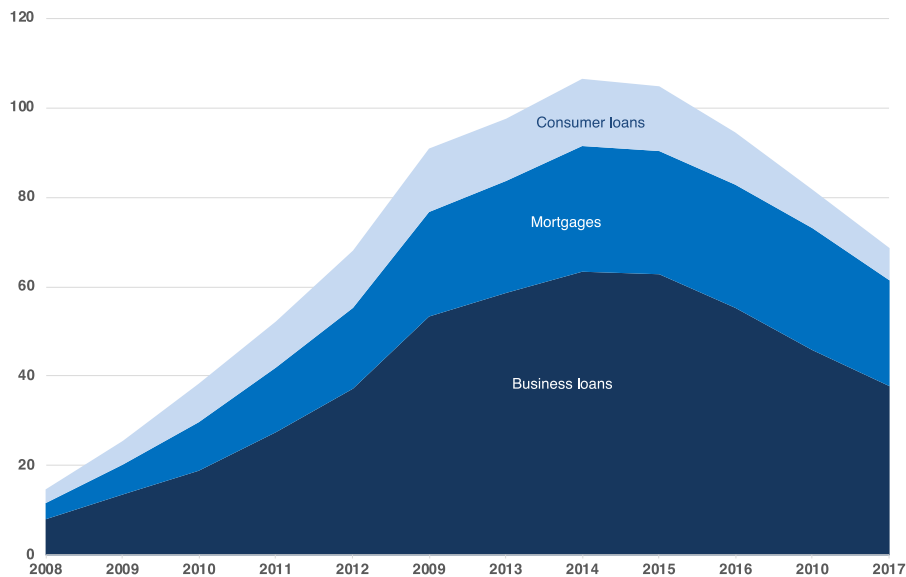
NPLs reached historically high levels across all categories of loans. The NPL problem was not restricted to a single sector or a particular category of loans. NPLs rose dramatically across both the household as well as the corporate sector. The highest NPL ratio was recorded for consumer loans at the end of 2015 (63 per cent). The NPL ratio for business loans touched almost 50 per cent in 2016, while the NPL ratio for mortgages was close to 45 per cent in 2018 (Figure 3.22). In terms of value, more than half of the Greek NPL exposures were in the business sector (Figure 3.23). Comparatively speaking, more than 80 per cent of bank NPLs were in the corporate sector in Italy, while mortgages accounted for the highest share of NPLs in Ireland and Spain.

Figure 3.22 Evolution of NPL ratio by sector



Source: Bank of Greece. The bars show overall NPL ratio (for all sectors combined)

Figure 3.23 Figure: Evolution of NPLs by sector



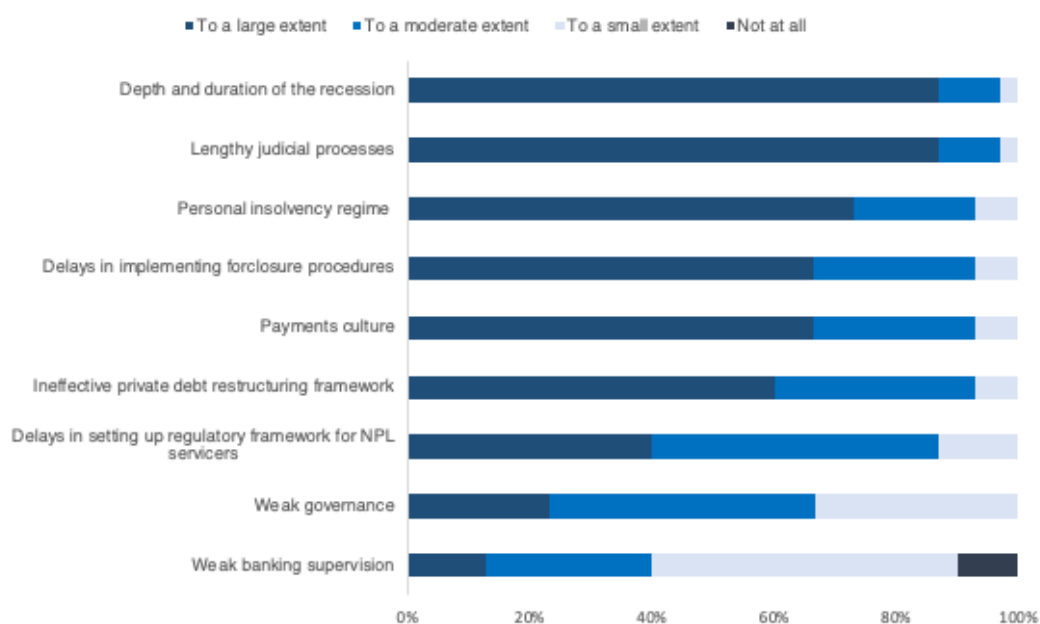
Source: Bank of Greece

The deepening recession and ongoing political uncertainty were the main factors behind the sharp rise in NPLs since the first quarter of 2012. Several studies examining the determinants of Greek NPLs have concluded that macroeconomic conditions and political uncertainty were the main drivers behind the large and persistent rise in NPLs during the crisis years¹⁷⁰. Stakeholder interviews and the results of the Delphi survey corroborate the findings of the literature review. All interviewees and 97 per cent of the Delphi survey respondents highlighted the length and depth of the recession as the main factor contributing to the growing stock of NPLs. The recession (and the resultant high rates of unemployment) had a huge negative effect on NPLs, as it reduced the ability of borrowers to service their debts. Unemployment rate rose from 7.75 per cent to over 27 per cent between 2008 and 2013, while GDP per capita in real terms fell by almost 26 per cent during the same period.

The persistently high level of NPLs were also a significant drag on economic activity, not only eroding the profitability and solvency of banks, but also severely constraining their capacity to lend, thus creating a vicious cycle (high levels of NPLs reduced banks' profitability, thus preventing them from lending more to businesses and consumers, which in turn slowed down economic growth).

¹⁷⁰ Bank of Greece, 2017. Working paper on the determinants of NPLs: lessons from Greece. See also the collection of essays in *Non-Performing Loans and Resolving Private Sector Insolvency Experiences from the EU Periphery and the Case of Greece*

Figure 3.24 Delphi survey - To what extent did the following factors contribute to the high and persistent level of NPLs among Greek banks during 2010-2018?



Source: Delphi survey, N=30

Greek banks lacked the capacity to deal with the growing volume of NPLs. The banking system had no capital buffers to absorb increasing losses. According to an evaluation conducted by the ESM¹⁷¹, the Greek banks were ineffective at working out their large NPL stocks. This stemmed from a lack of expertise and weak institutional set-up, such as, a lack of adequate NPL workout divisions within a bank and inefficient internal reporting lines to banks' credit committees. Banks' initial response to engage in short-term loan modifications (arrear capitalization, reduced payments, etc.) was ineffective. Most banks had low standards for borrower qualification and loan structure, with redefault rates on such modifications close to 60 percent within one year. Restructurings proved to be inefficient, and NPLs increased further¹⁷².

Legislative changes contributed to a deterioration of payment discipline and the persistence of high mortgage NPLs by removing the threat of foreclosure. Legislative changes such as the blanket moratorium on primary residence auctions and the abuse of foreclosure protection further exacerbated the NPL problem¹⁷³. In 2010, Greece introduced the *Katseli law* to protect vulnerable borrowers by preventing creditors from foreclosing on primary residences (see Box 3.10).

The weak payment culture in Greece exacerbated banks' non-performing exposures. ECB estimated that about 30 per cent of debtors who stopped servicing mortgage loans were strategic defaulters who took advantage of the moratorium and inefficiencies of the insolvency process¹⁷⁴. Another study, using proprietary data from a large bank showed a similar estimate, with 28 per cent of defaults in primary residence mortgages found to be

¹⁷¹ ESM (2017). Evaluation of EFSF/ESM programmes.

¹⁷² IMF (2019a). IMF Country Report No. 19/341 – Greece: selected issues.

¹⁷³ Stournaras, Y., "The Greek economy 10 years after the crisis and lessons for the future both for Greece and the Eurozone," June 28, 2019, European Court of Auditors, Luxembourg, Speech

¹⁷⁴ ECB (2016) Stock-take of national supervisory practices and legal frameworks related to NPLs

strategic¹⁷⁵. Using loan payment data of Greek firms, another study¹⁷⁶ found that find that one out of six firms with non- performing loans was a strategic defaulter. Some press reports go as far as suggesting that strategic defaulters are responsible for the non-payment of some 35 per cent of bad corporate loans¹⁷⁷.

A lengthy and inefficient judicial system and the lack of a secondary market (for sale of NPLs) hampered the resolution of NPLs. Inefficiencies in the court system allowed debtors to benefit from a blanket stay on creditor action for years before their cases would be heard. These legal shortcomings prevented the restructuring of non-performing mortgage loans and created significant opportunities for strategic default¹⁷⁸. 97% of the Delphi survey respondents indicated lengthy judicial processes as a factor that contributed to the NPL problem. Several interviewees also highlighted the lack of a secondary market for NPL sales as a problem. Secondary markets facilitate resolution of NPLs by enabling banks to sell off to third party investors and credit servicers (debt collectors). This relieves the burden on banks of debt collection and collateral foreclosure. By leveraging outside financing and expertise, secondary markets also help improve recovery of bad loans.

Legal infrastructure for NPL resolution was missing. Apart from the lack of a secondary market for NPLs, there were several legal impediments and constraints e.g. lack of an appropriate insolvency framework, absence of out of court settlement systems, lack of an electronic auction system, non-banks could not purchase NPLs, banks could not create black list of defaulters etc. Lack of political will and vested interests stifled progress in these areas - see next section.

Loose credit conditions prior to the crisis and weak governance are also said to have contributed to the NPL problem., Several interviewees and Delphi survey responses suggest that weak corporate governance and loose credit conditions played a role in contributing to the build-up of NPLs. There was rapid credit expansion when Greece adopted the Euro. Corporate sector credits grew by a factor of 2.6 between 2001 and 2008, while household lending grew almost five-fold during this period - Figure 3.25. Empirical studies, however, found no evidence to suggest that NPLs were a result of overly aggressive lending practices by Greek banks during the pre-crisis years nor any systematic efforts to boost current earnings by extending credit to lower credit quality clients¹⁷⁹. One reason for this could be Greece's relatively low overall private sector indebtedness at the start of the crisis (Figure 3.26). Besides, as illustrated in Figure 3.22, the NPL ratio shot up as the recession deepened.

¹⁷⁵ Artavanis N. and Spyridopoulos I. (2019) Foreclosure Moratorium and Strategic Default.

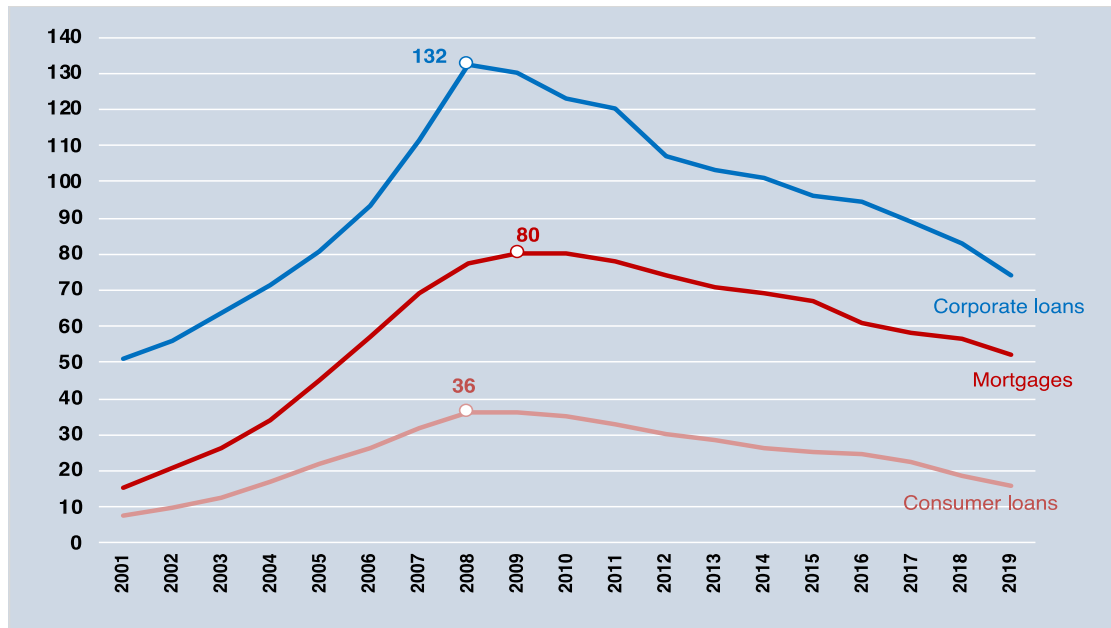
¹⁷⁶ Asimakopoulos, I., Avramidis, P.K., Malliaropoulos, D. and Travlos, N.G. (2017) Micro-behavioral Characteristics in a Recessionary Environment: Moral Hazard and Strategic Default

¹⁷⁷ Papadoyiannis, Y. (2018) Strategic defaulters are now believed to account for 40 pct of NPLs, Ekathimerini, 10.03.2018. Available at: <https://www.ekathimerini.com/226601/article/ekathimerini/business/strategic-defaulters-are-now-believed-to-account-for-40-pct-of-npls>

¹⁷⁸ IMF (2019a) op cit

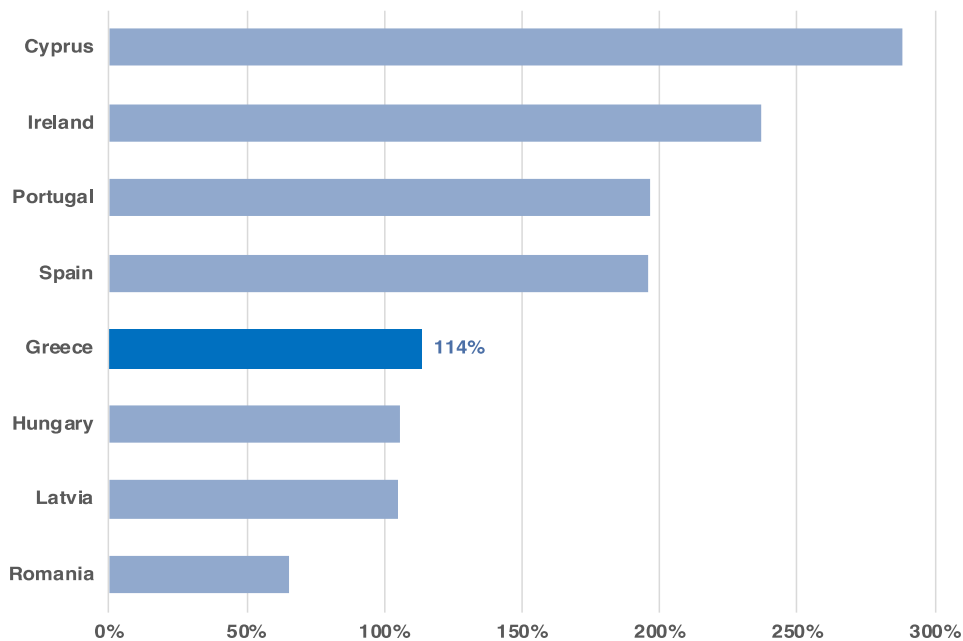
¹⁷⁹ See previous notes. See also Hellenic Observatory (2016). Explaining Non-Performing Loans in Greece: A Comparative Study on the Effects of Recession and Banking Practices

Figure 3.25 Credit to domestic non-MFI residents by domestic MFIs excluding the Bank of Greece ((outstanding amounts at end of period in EUR bln)



Source: Bank of Greece. The chart excludes other loans to Individuals and private non-profit institutions (due to relatively small share) and loans to sole proprietors (data only available from 2010 onwards)

Figure 3.26 Private debt as percentage of GDP (based on financial sector balance sheet), 2008



Source: DG FISMA

Overall, the scale and gravity of the NPL problem was underestimated by both the banks and the authorities. Firstly, the depth and intensity of the recession, as well as its impact on NPLs, was underestimated by both the authorities and the banks alike. Secondly, the impact of the lack of a functioning legal system on NPL resolution was underestimated. The scale of strategic defaulters and the legal obstacles involved in addressing this issue (as well as the NPL issue more widely) only became evident as the crisis unfolded. In its Staff

Report accompanying the July 2017 request from Greek authorities for SBA¹⁸⁰, the IMF reports *'..staff is concerned that the strategy for dealing with NPLs in effect relies on the extremely optimistic assumption that banks can gradually grow out of this problem.'*

3.4.2 Effectiveness of the programme policies in addressing the NPLs

The following section addresses study question 4b.

Question 4b: To what extent were programme policies adequate in limiting the initial build-up of the NPL portfolio, given the underlying conditions? Subsequently, were programme policies adequate in facilitating effective NPL resolution and reduction?

In order to respond to this study question, this section examines the following aspects:

- Key measures introduced to tackle the NPLs issue;
- Adequacy of program polices to tackle effectively the NPLs resolution and reduction.

3.4.2.1 Key measures introduced to tackle the NPLs issue

The authorities' response to tackle the issue of non-performing loans broadly consisted of a three pronged approach:

- Enhancement of the supervisory framework for the management of non-performing exposures (NPEs).
- Removal of legal, judicial and administrative impediments to NPL management.
- Establishment of a secondary market for NPL servicing and sales.

Within each of these pillars, a raft of measures were adopted by the Greek authorities to tackle the growing NPL problem. The Box below provides a chronological listing of these measures .

Box 3.10 Key legislation and non-legislative measures related to the NPLs introduced by programs or independently (2010-2018)

2010

In August 2010, the first-ever personal insolvency law was adopted (Law no. 3869/2010, also known as 'Katseli Law', from the surname of the related minister). Its aim was to give debtors with proven inability¹⁸¹ to serve their loan a way to proceed to a settlement with their creditors, in order to repay a part of their debt. The law mainly protected primary residences from auctions until a restructuring was achieved (article 19). Since the law came into force at September 1st 2010, up until the end of 2016, more than 200.000 applications were filed¹⁸². The loose eligibility criteria (articles 1,2)¹⁸³, led also to a large number of "strategic" filings, with debtors essentially making small payments for

¹⁸⁰ IMF Country Report No. 17/229

¹⁸¹ Although this was the aim of the Law, a specific definition of proven inability to serve a loan was not provided in it; this issue was addressed by the courts, which granted this status to most filers.

¹⁸² Source: IMF Selected Issue Papers, Country Report No. 19/341, November 2019.

¹⁸³ According to Article 1 of this law "Persons who are insolvent and have, without cause, been permanently unable to pay their outstanding arrears, shall be entitled to submit to the competent court an application for the settlement of such debts and discharge". According to the same law article "debts undertaken in the last year before the application for initiation of the above proceedings cannot be settled". According to Article 2 of this law " A prerequisite for the debtor to apply for a debt settlement and discharge before the competent court, is an attempt to reach an out-of-court settlement with his creditors and his failure to do so within the last six months prior to the application".

years after the application, until the court hearing. Its main problem was that it elevated primary residence protection above other considerations, undermining payment culture considerably. Notably, the first Economic Adjustment Programme did not address the negative implications of this law on private debt servicing.

With Law no. 3898/2010, mediation procedures in civil law and commercial law judicial cases were introduced, concerning also banks and bank debtors. The mediator must be a lawyer accredited as such. Mediators should be granted a license from training bodies. These procedures were enacted in the context of adopting Directive 2008/52/EC of the European Parliament and of the Council.

2011

In a modification of Law no. 3869/2010, Law no. 3910/2011 was enacted on July 2011, introducing a moratorium on foreclosure of primary residences, amending article 19 of Law no. 3869/2010. Subsequent revisions of Law no.3869/2010, such as Law no. 4128/2013, extended the moratorium until 31/12/2013. In the reviews of the first and second Economic Adjustment Programmes these alterations are neither endorsed nor mentioned.

2013

The code of conduct for dealing with defaulted loans were adopted in 2013. Acceptable living cost were adopted to help judges in household insolvency cases

In June 2013, Law no. 4161/2013 was legislated, in order to address the implementation shortfalls of Law no. 3869/2010 ('Katseli Law') and to deter applications from "strategic" defaulters. According to this law's provisions, while the final court hearing for debtors was pending, they were obligated to pay creditors an amount equal to at least 10 percent of their last overdue loan installment, which could not be less than €40 per month.

2015

With Law no. 4335/2015, concerning amendments to the Code of Civil Procedure, changes to auction procedures were initiated, such as delineating the required steps to be followed in the case of electronic auctions.

In August and November 2015, respectively, the Greek Parliament passed Laws no. 4336/2015 and no. 4346/2015, in order to amend article 9 of Law no. 3869/2010 ('Katseli Law'). Law no. 4346/2015 introduced stricter eligibility criteria regarding the creditors' income, wealth and property value¹⁸⁴, while also helping banks to identify "strategic" defaulters. Its most significant provisions concerned the definition of acceptable living expenses, which could be used by the courts in order to reduce approval of applications for protection. Furthermore, Law no. 4336/2015 included a provision for cooperating borrowers¹⁸⁵, so that only they could be protected from mortgage liquidation. Both these laws also introduced a new 'Facilitation Program' in order to help distressed borrowers facilitate the settlement of unsustainable household debt, based on the aforementioned definitions of affordability, as well as a provision to exclude from the programs' provisions a debtor once he did not meet the inclusion criteria. All these amendments were introduced in the context of the second Economic Adjustment Programme¹⁸⁶, in order to

¹⁸⁴ For instance, in order for a debtor who does not have a family to be eligible for filing an application, his/her monthly disposable income and property value should not exceed the acceptable living expenses by more than 1.7 times, and €180.000 respectively.

¹⁸⁵ Bank of Greece Act 148/10/15.10.2015 provided a definition of non-cooperating borrowers. According to this Act, a borrower delaying to pay four consecutive monthly installments would be excluded from the provisions of the Katseli law.

¹⁸⁶ Source: The second Economic Adjustment Programme for Greece - Second review, Occasional Papers 148, DG ECFIN, pp. 82-83.

narrow the scope and eligibility of the Katseli law, and deter strategic defaulters from filing an application, in order to be protected.

In December 2015, Law no. 4354/2015 was adopted, introducing a regulatory framework for servicing and transferring NPLs (hereinafter "the NPL Law"). The key provisions under this law were related to the ability to establish a Loan Asset Management Companies ("LAMC's") and to the legal framework under which they operated. The prerequisite for establishing such a company was the acquisition of a special license provided by the Bank of Greece. The Law was not applicable until 15.2.2016. The provisions of this law were specified in the context of the third Economic Adjustment Programme.

The third programme also tasked the HFSF with presenting and implementing an NPL resolution plan that would enhance coordination among banks and accelerate large corporate restructuring.

The BoG had to report on the segmentation of NPLs on bank balance sheets and assess banks' capacity to deal with each segment.

2016

Following that, the Greek Parliament passed on 22.5.2016 a voluminous bill (Law no. 4389/2016) with a series of reforms that paved the way for an agreement on bailout loans and debt relief discussions. Within the measures passed, the framework on NPLs was also revised, in order to help the development of the NPL secondary market in Greece, thus effectively amending the NPL Law mentioned above.

The BoG, in cooperation with the ECB Banking Supervision (the SSM) issued supervisory guidelines for the internal management of NPEs and agreed NPE operational targets with banks for the period June 2017 - December 2019 to drastically reduce NPLs and NPEs through write-offs, loan sales and other modes of restructuring and curing¹⁸⁷.

The BoG monitors the implementation of NPE targets and related key performance indicators through an enhanced prudential reporting framework. This framework has been revised to take banks up until end-2021 and fully align Greek banks with the NPE guidance provided by the SSM.

2017

Law no. 4469/2017 was passed, creating for the first time a mechanism for out-of-court debt settlement for indebted businesses¹⁸⁸. The main provisions of this law concerned the criteria for assessing the eligibility and viability of a debtor, the adoption of the "No-Creditor-Worse Off" principle and procedures for debt restructuring, according to the debtor's ability to serve it. This law was designed in the context of reforms initiated by the third Economic Adjustment Programme¹⁸⁹.

On May 2017, the Hellenic Parliament enacted Law no. 4472/2017, further amending Law no. 4354/2015 (the "NPL Law"), which was introduced with a view to creating a secondary market for debt receivables from non-performing loans in Greece. Law no. 4472/2017 amended the NPL Law in order to facilitate the procedure for the licensing of LAMC's¹⁹⁰. Also, the law broadened the scope of the LAMCs, allowing them to also manage immovable property functioning as collateral for their claims. As of May 2019, in total 20 applications for establishing an LAMC were submitted to the Bank of Greece. As of February 2020,

¹⁸⁷ Source: Supplemental Memorandum of Understanding: Greece, DG ECFIN, June 2016, p. 22.

¹⁸⁸ For the most part, the previously enacted laws, mainly Law no. 3869/2010 and its revisions, concerned indebted households.

¹⁸⁹ Source: The second Economic Adjustment Programme for Greece - Second review, Occasional Papers 148, DG ECFIN, p. 40.

¹⁹⁰ According to the previous law, the decision of a three-member committee appointed by the ministers of Finance, Development and Tourism was required.

there were already 23 LAMCs operating in Greece, with at most 10 of them having relatively big market shares. Once more, the provisions of this law with respect to LAMCs were introduced in the context of the third Adjustment Programme¹⁹¹.

In addition, the Executive Committee of the BoG also issued Act 118/19.5.2017, which sets out the framework for the establishment and operation of the LAMCs in respect of the documentation and procedure for licensing and operation. This Act replaced Act 95/27.5.2016 of the Executive Committee of the BoG.

Furthermore, Law no. 4472/2017 introduced the option of electronic auctions for pending foreclosure proceedings of immovable property sales, with Ministerial Decision no. 41756/30.05.2017 providing further clarifications. The new rules are applied since November 2017. The aim of these provisions was to facilitate the implementation of said auctions.

2018

Due to the impediments in implementing physical auctions proceedings, such as the slow pace of auction execution (the Code of Civil Procedure allowed physical auctions to be held only one day per week, while the provisions of Law no. 4472/2017 extended this limitation to three days per week for e-auctions), the Greek Parliament enacted Law no. 4512/2018, mandating the use of electronic auctions for all types of immovable property. However, its application to unserviced residential mortgages has been limited, with about 70% of all auctions ending in failure¹⁹², and no measures taken to address this issue.

Law no. 4587/2018, enacted on December 2018, amended Law no. 4469/2017, enabling creditors with smaller claims to participate in the out-of-court workout with an indebted business; thus, the application range of the previous law was expanded.

2019

The Greek Parliament enacted Law no. 4649/2019 in December 2019, establishing the so called 'Hercules Asset Protection Scheme'. This Law was passed after the completion of the Adjustment Programmes, hence the reforms it introduces are out of their scope of reforms. Under the Hercules scheme, NPLs will be removed from banks' balance sheets and securitized, with the help of a government guarantee¹⁹³.

3.4.2.2 Adequacy of program polices to tackle effectively the NPLs resolution and reduction

The authorities were relatively late in devising and implementing a strategy to deal with NPLs, which became a priority only under the third programme. Some measures to tackle NPLs were introduced during the early years of the crisis, as indicated in the box above and additionally cited by interviewees:

- IMF experts specialising in NPLs joined the programme as early as 2012;
- Diagnostics on the impediment of NPLs resolution also started in 2012;

¹⁹¹ Source: Supplemental Memorandum of Understanding: Greece, DG ECFIN, June 2016, p. 21.

¹⁹² Source: IMF Selected Issue Papers, Country Report No. 19/341, November 2019

¹⁹³ In these securitisation deals, a bank transfers some of its bad debts into a financing vehicle that then sells different slices of risk to fund managers or other specialist buyers. As debt collectors recover money from consumers and businesses that have fallen behind on their payments, the proceeds flow to these investors, with the safest piece getting repaid first and the riskiest last.

The Hercules scheme makes the top-ranking slices of these deals even safer, by backing them with a guarantee that the Greek government will step in if they are not covered by the underlying loan repayments. This would make such securitisations even more attractive to investors

- Blackrock was asked to check the NPL resolution practice of each bank and make recommendations in 2013;
- The AQR report had a chapter on troubled asset review available early 2014;
- The Civil Code which regulates auctions of debt collaterals was modernised after years of negotiations with the Ministry of Justice. Out of court debt settlement scheme was adopted in 2014.

These measures were not adequate, however, and arguably the most important reforms relating to NPL resolution only started in 2015. This was also asserted by some interviewees and highlighted in other evaluations of the Greek programmes (see Box 3.11). By then, all borrowers were legally protected from auctions of primary residence (regardless of income, wealth or size of mortgage loan) which created a category of strategic defaulters. The delay in pursuing NPL reform is partly understandable considering the extremely challenging context in Greece (both economic and political) and that the authorities were constantly in a firefighting mode, which required prioritisation of issues (PSI, recapitalisation, etc.).

Box 3.11 Extracts from existing evaluations and audits on the effectiveness of programme policies tackling the NPL issue

IMF (2017) Greece: Ex-Post Evaluation of Exceptional Access Under the 2012 Extended Arrangement. Country Report No. 17/44

"While certain measures on private debt restructuring and NPLs management were introduced early in the program, a comprehensive strategy to tackle NPLs and insolvency frameworks was only adopted relatively late (during the 5th Review) and largely in reaction to poorly designed government initiatives, when rising household and corporate bankruptcies made insolvency reform even more politically difficult."

"Signs of rising risks to asset quality stemming from previous rapid credit growth and precipitous increases in real estate prices did not receive sufficient attention in 2012. This could be in part explained by the benign growth forecast at the time of the program request, as well as emerging political opposition to removing foreclosure moratoria, political instability, and significant capacity constraints. As a result, many financial sector reforms, including private sector insolvency frameworks and NPL reduction measures, were initiated with a significant delay. The slow pace of balance sheet repair contributed to high NPLs, which in turn created headwinds to credit and real activity."

"Delays in addressing NPLs, private sector insolvency frameworks, and governance issues in the banking sector weighed on the recovery. Steadfast implementation of reforms in these areas should be given high priority."

European Court of Auditors. The Commission's intervention in the Greek financial crisis. SR 17

(i) The ECA Report questions whether there has been a comprehensive assessment of the appropriateness of creating an asset management company (AMC) in the Greek context). Argument put forward for NOT using it: funding constraints, diversification of NPLs across all sectors, governance issues and EU state-aid considerations.

(ii) Questions whether NPLs were considered a priority early enough: first programme only provided a commitment to review insolvency legislation; second programme relying mostly on banks' internal NPL management which, although essential, proved largely ineffective, tangible reforms to improve bank's internal management processes were put in place only as from the third programme. Besides, only the third programme included a condition to create a functioning market for NPL servicing and sales. However, several key impediments were not removed either by the law adopted in late 2015 or by two further amendments in 2016 (also covering performing loans), and the legal framework remained burdensome.

(iii) The complexity of the insolvency framework has perpetuated the NPL problem rather than addressing it within a coherent, centralised strategic framework with clear policy priorities. The framework's design also did not take account of the judicial system's limited capacity for dealing effectively with the large volume of cases. Taken together, such complexity and capacity problems have generated backlogs, thus disseminating strategic default and moral hazard throughout the system

(iv) In the case of banks under special liquidation which handled mostly non-performing loans, operations were fragmented for a long period, giving rise to low efficiency in terms of NPL collection and operating costs. For example, the consolidation of operations (16 entities into one) was only a condition under the third programme and was implemented more than three years after the original proposal by external consultants. The liquidation procedure absorbed 13.5 billion euros from the programmes' funding via the HFSF and further 1.7 billion euros from the national deposit guarantee fund.

ESM (2017) Evaluation of EFSF/ESM programmes

Greece NPL strategy implementation was considerably delayed or has only been partially implemented. NPLs stemmed from all loan segments, take a longer time to fix (need to work on improving banks' internal work-out capacity and reforming the overall insolvency and judicial systems rather than using Asset Management Companies (AMC))

ESM (2020) Restoring growth and financial stability: how Greek banks contributed

'The second programme was silent on how to deal with NPLs should a bank be restructured or resolved, or indeed on whether reducing NPLs was a desirable strategy to repair bank balance sheets. To meet capital adequacy requirements, banks could always in practice reduce their loan supply to conserve capital but keep their NPLs, but this would be detrimental for the economy. That second programme NPL silence meant guidance was absent on how to implement legal reform to accelerate the recovery of collateral should banks want to reduce their NPL stock. These shortcomings were addressed in the third programme's MoU under actions to be taken to safeguard financial stability. The main focus was on: (a) normalising liquidity and payment conditions and strengthening bank capital; (b) enhancing governance; and (c) addressing NPLs.'

Tackling NPLs was a politically sensitive issue and this delayed the adoption of some key reforms. Several interviewees mentioned that there was lack of political will 'to go after the debtors'. The Greek governments - both the 2012-2014 government and the SYRIZA-ANEL government - were hostile to any kind of adjustment to loans. As stated by one interviewee 'During the crisis, it was politically impossible to put an insolvency framework in place as people were suffering'. Some interviewees, however, suggested that Greece's international creditors should have been more assertive, with the Greek authorities and pushed for a more rapid adjustment of NPLs.

The authorities preferred private sector solutions to reduce NPLs, but these have not yet proven to be particularly successful. The authorities' approach to reducing NPLs centred on aligning corporate insolvency law with international practice, making changes to household insolvency law¹⁹⁴ and creating a regulated profession of insolvency administrators. The expectation was that these reforms would 'unleash market forces that would help to reduce the NPLs'. However, private sector solutions to reduce NPLs have not proven particularly successful so far¹⁹⁵, although the Hercules protection scheme (securitisation of NPLs via market driven solutions) is starting to bear fruit.

¹⁹⁴ by introducing a time-limited stay on enforcement similar to other countries.

¹⁹⁵ ESM (2020). Restoring growth and financial stability: how Greek banks contributed.

While a clear downward trend is visible, the NPL ratio remains stubbornly high. Non-performing loans amounted to EUR 68.5 bln at the end of December 2019, down by EUR 39 bln from their peak in March 2016. However, the NPL ratio remains high, at 40.6 per cent in December 2019 and well above the target of 20.4 per cent.

Measures have been implemented with mixed results (see Table 3.4). For example, many stakeholders believe that the setting of NPL reduction targets was a good measure (even though the 2019 target will not be met as some of the planned NPL securitizations were delayed by a few months so as to fall under the Hercules scheme), as it focused authorities' efforts to resolve the problem. Interviewees also suggested that the out-of-courts settlement scheme has not been particularly effective, as evidenced by the low number of loans processed. The secondary market for NPLs has not yet fully taken off, despite a clear acceleration in 2019. According to anecdotal evidence, over 20 servicers obtained licences, but only three-four have loans that they are currently servicing.

Table 3.4 Delphi survey - How effective have the following measures been in addressing the high level of NPLs?

	Effective	Somewhat effective	Highly effective	Ineffective	To early to say
Enhancement of the supervisory framework for the management of NPLs e.g. setting ambitious NPL reduction targets for bank	67%	13%	10%	7%	3%
Establishment of electronic auction platforms to allow the sale of collateral in defaulted loans by banks	53%	27%	13%	3%	3%
A reform of the insolvency regime for households and enterprises	50%	37%	0%	13%	0%
Enhancement of secured creditor rights	50%	33%	7%	7%	3%
Introduction of an out of court procedure in 2014	43%	33%	23%	0%	0%
Simplification of legal proceedings	40%	33%	13%	13%	0%
Simplification of the sale of NPLs through the liberalisation of the loan-servicing regime and the introduction of a secondary loan market	30%	23%	3%	40%	3%

Source: Delphi survey, N=30

While NPL reform is a long and complex process, NPL resolution in the Greek context nevertheless was impeded by delays or lack of progress on significant NPL reform and other impediments:

- Prioritisation of repayment of State debt over bank debt. Greek businesses and households were massively indebted to the State and tax debt, already high, had started to build further during the crisis. According to some stakeholders, the repayment of tax debt was prioritised over repayment of bank debt;
- Delays in development of legislation for NPL servicing and sales. Although work started in 2014, it only materialised after the approval of the third programme;

As already mentioned, reluctance of the Greek authorities and political sensitivities around evictions and changing the legislative framework for the management of NPLs

- Some measures did not deliver the desired results, e.g. out-of-court settlement scheme, e-auctions.

The option of creating an Asset Management Company (AMC, or bad bank), while discarded during the programmes, is now seen by BoG as one potential way of accelerating the reduction of NPLs. Initial arguments against the creation of an AMC were as follows:

- The Greek NPL stock was large and comprised heterogenous as well as harder-to-value non-standardised assets (such as SME loans). While AMCs were created in Ireland (to deal with commercial real estate debt) and Spain (to deal with residential real estate debt), there were no precedents of an AMC pooling different asset classes;
- The creation of an AMC could come at a cost that would deplete or even exceed the available maximum fiscal place of the Greek government under the programmes, while it would have implications for the Greek public debt.¹⁹⁶.
- Other factors such as the lack of time and capacity needed to set-up an AMC; concerns on the governance aspects of a public AMC, the importance of the bank-client relation in a context of widespread strategic default, the impact on banks' balance sheets and EU state-aid considerations.

For the above reasons, an AMC was not considered to be an appropriate solution for addressing NPLs at the time. Moreover, the creation of an AMC would not have solved the issues relating to payments culture and strategic defaulters. Some stakeholders interviewed however, were of the opinion that this was a missed opportunity to address the NPL problem. It is not within the scope of the present study to judge whether this decision was justified at the time or not.

3.5 Governance aspects of the Greek banking sector

3.5.1 Effectiveness of programme policies to improve the governance of the Greek banks

The following section addresses the study question 5a and 5b:

Question 5a: To what extent were programme policies adequate to improve the governance of Greek banks?

Question 5b: To what extent has the Hellenic Financial Stability Fund (HFSF) played an effective role in this regard?

In order to respond to the study question 5a, the following aspects will be considered:

- Key programme policies concerning the governance of Greek banks
- Assessment of the effectiveness of the key corporate governance reforms

Regarding the study question 5b, the following aspects will be considered:

- Description of the HFSF and of its role to the banking sector during 2010-2018
- Reforms of HFSF competence and governance
- Assessment of the role of the HFSF and impact of changes to its governance on the effectiveness of the banking sector

¹⁹⁶ ESM (2020). op cit.

3.5.2 Adequacy of the programme policies to improve the governance of Greek banks

3.5.2.1 Key programme policies concerning the governance of Greek banks

In the aftermath of the global financial crisis and prior to the first Economic Adjustment Programme for Greece, that is from the beginning of 2009 and up to May 2010, there are no references to governance aspects of the banking sector in Greece in reports of well-known Greek and European institutions, such as the Bank of Greece, European Commission and European Central Bank. These reports, listed below, have also been reviewed as part of the assessment under study question 1 (Box 3.2), focusing on the diagnosis of the financial sector at the outset of the crisis:

- The Annual Reports of the Bank of Greece for 2008 and 2009, published in April 2009 and April 2010;
- The Monetary Policy Reports of the same institution for 2009 and 2010, published in March 2010 and March 2009;
- The Financial Stability Reviews of the European Central Bank for 2009 and 2010 and
- The European Economic Forecasts of the European Commission, for spring and autumn 2009, as well as for spring 2010.

Thus, before the 2010 sovereign crisis in Greece, no inefficiencies to the governance of the banking sector were explicitly spelt out. Hence, changes to it were not included to the political agenda before the Economic Adjustment Programmes (EAPs).

The conditionality of the first EAP for Greece did not include direct interventions to the framework of the governance of the Greek banks. But, the founding law of the HFSF,¹⁹⁷ which is in accordance with Annex 2 of the MoU for the first EAP, established that in case the Fund participates to the recapitalisation of a credit institution with a share up to 90 per cent, it has the right to be represented in its board of directors by one member¹⁹⁸. This member had a veto right on decisions, which are readily presented in the subsection 4.5.2.2, as they concern the Fund's degree of intervention to the governance of the banking sector and its effects. In case of a participation to a recapitalisation with a share higher than 90 per cent, then the Fund's voting rights are in accordance to this share.

The main reason behind the limited participation and control of the HFSF over the board of directors, despite a significant contribution to a recapitalisation, was to avoid the State's interference to the management of the banks and to keep it to the hands of the private sector to ensure private management practices. From this rationale it also emerges that since the launch of the first programme, there were concerns among the official lenders about potential government's interventions, although these did not lead to a policy intervention about restructuring the governance of the banking sector, as at the start of the third EAP. This approach to the HFSF role in the recapitalised banks' management was likely an important sweetener in banks' efforts to attract private investors.

The first EAP brought no other changes to the legal framework regarding the governance of the Greek banks. Also, the Greek authorities did not proceed on their own with such reforms.

But, the above HFSF law provision was activated during the second EAP, in the context of the first recapitalisation of the banking system, during January-June 2013. Specifically, the HFSF fully covered the capital needs of one of the four systemic banks, namely of Eurobank, which subsequently came under State's ownership, whereas its share to the recapitalisation of Alpha Bank, National Bank of Greece and Piraeus Bank was below 90

¹⁹⁷ Law No.3864/2010, Government Gazette 119 A', 21/07/2010. Available at: <http://www.hfsf.gr/files/legal/01.L3864.pdf>

¹⁹⁸ DG ECFIN, 2010. The Economic Adjustment Programme for Greece, Occasional Papers 61, May 2010

per cent. Thus, the Fund's participation to their boards of directors and control over those banks was limited than that of a normal majority shareholder. Consequently, although the HFSF founding law provisions brought changes to the governance of the Greek banks, these were not in line with full control as in a conventional structure where majority shareholder has wide rights. The participation rates of the HFSF to the capital share of these banks during 2010-2018 is presented in the subsection 4.5.2.1, about the role of the Fund to the banking sector in this period.

In May 2012, a few months after the conclusion of the second EAP, the RFA was enacted between the HFSF and a bank that receives financial support from the Fund¹⁹⁹. An RFA regulates the relations between a bank and the Fund in respect of: (a) corporate governance, (b) preparation and approval of the restructuring plan, (c) significant obligations under the restructuring plan and the change in HFSF's voting rights, (d) the monitoring of the implementation of the restructuring plan and all risks undertaken thereof, and (e) HFSF's consent rights. The Fund concluded different RFAs for transitional credit institutions, for banks where the HFSF has full voting rights (private sector participation <10 per cent) and for those where the HFSF has restricted voting rights (private sector participation ≥10 per cent), The establishment of the RFAs was the only – albeit important – reform to banks' governance during the second EAP.

In the spring of 2014, the second recapitalisation of the banking system took place, with all the capital infused to four 'core banks' coming from the private sector. Accordingly, the Fund's participation to the board of Eurobank declined.

No other policies concerning either the means to intervene in banks' governance or the restructuring of the management of the banking sector were designed or implemented in the second EAP.

The most important changes to the management of the Greek banks were brought by the third EAP. Regarding banks governance, the general principle explicitly stated in the MoU between the ESM and Greece in August 2015 was that 'The government will not intervene in the management, decision-making and commercial operations of banks, which will continue to operate strictly in accordance with market principles'. Furthermore, 'the board members and senior management of the banks will be appointed without any interference by the government. These appointments will be made in line with EU legislation and best international practices, taking into account the specific rules in the HFSF law as regards the rights of the private shareholders who participated in the banks' capital increases under the existing framework²⁰⁰.'

According to a provision of the MoU between the ESM and Greece in August 2015, the HFSF should introduce a process to review the boards' and committees' members of the four systemic banks, with the help of an independent international consultant (p.21). After the conclusion of the review, the boards of directors should include at least three independent, non-executive international experts, with adequate knowledge and long-term international experience in banking. The MoU included no specification of this knowledge and experience. They were also required to have no affiliation with any Greek credit institution during the last 10 years. These criteria mainly constituted the 'fit and proper' rules for assessing bank management, which were established with Law No.4340/2015. According to MoU for the third programme (also p.21), they aimed to ensure the prudent management and full independence of the banks that were recapitalised by the Greek government.

¹⁹⁹ Ministerial Council Act 15 of 03-05-2012, Government Gazette 117 A', 04/05/2012. Available at: <http://www.hfsf.gr/files/legal/11.CA119.pdf>

²⁰⁰ European Commission (2015). Memorandum of Understanding between the European Commission, acting on behalf of the European Stability Mechanism, and the Hellenic Republic, and the Bank of Greece, August 2015

Besides the above conditions, Law No.4340/2015²⁰¹ established the following reviewing criteria:

- At least one member should have expertise and at least 5 years of international experience in risk management and distressed asset management;
- Besides the requirement for at least 10 years of international banking experience, the aforementioned independent, non-executive experts should have at least three years of experience as a board member or in a senior managerial level position, and,
- Individuals that had served in senior civil servant, public corporation or partisan positions in the last three years were excluded from board membership. The aforementioned criteria were the minimum requirements for board membership and any amendment was in the discretion of the HFSF and the consultant.

A few weeks later after the enactment of Law No.4340//2015 some of its aforementioned provisions were amended through Law No.4346/2015²⁰²: More specifically, the 10-year experience in international banking for independent, non-executive experts increased to 15 years, whereas their required three-year experience in a senior managerial position should have been acquired in institutions not operating in the Greek credit market. A 10-year experience, either domestically or internationally, was put as a prerequisite for the rest of the members of the board. Finally, the moratorium for those who had served in senior civil servant, public corporation or partisan positions was extended to 4 years.

The reviewing criteria of banks' boards of directors established under the third EAP are considered demanding for banking sector experts. Also, the requirement for the three independent international experts with no affiliation with any Greek credit institution during the last 10 years is indicative of the intention to remove part of the long-term management of the banks. The rationale of this intention is considered to be reduction of the risk of political interference, as well as of relations with long-term, highly indebted borrowers. The tightening of the evaluation rules is considered indicative of the third EAP's aim to staff the boards of directors with highly experienced members in international banking, who would be capable of managing the core banks after their third recapitalisation, helping them to confronting their multiple problems, particularly NPLs, and avoiding the need for another recapitalisation, at least in the medium-term.

In April 2016, the HFSF announced that in order to implement the evaluation of the boards of directors and committees of the systemic banks, it would be assisted on a technical basis by the European Bank for Reconstruction and Development (EBRD). Furthermore, it had conducted a tendering process according to which Spencer Stuart was selected as the preferred consulting firm for the evaluation process²⁰³.

The conclusions and recommendations of this evaluation are considered valuable for the assessment of the efficiency of the changes that the new criteria brought to the synthesis of banks' boards and committees. The contractor of the current study requested the report of the evaluation from the HFSF. It was not provided on the basis that it contains highly sensitive information including personal assessments of individual banks board of directors members.

A few months earlier than the launch of the assessment, in November-December 2015, the third recapitalisation of the banking system was implemented. Two of the four 'core banks', namely Piraeus Bank and NBG, received capital injections from the HFSF, while the

²⁰¹ Law No.4340/2015, Government Gazette 134 A', 01/11/2015. Available at: <http://www.hfsf.gr/files/legal/24.L4340am20.pdf>

²⁰² Law No.4346/2015, Government Gazette 152 A', 20/11/2015. Available at: <http://www.hfsf.gr/files/legal/25.L4346am21.pdf>

²⁰³ HFSF press release. Available at: http://www.hfsf.gr/files/announcement_20160428_en.pdf

other two managed to raise their required capital needs from the private market. The needed HFSF funds for recapitalisation were significantly lower than initially expected²⁰⁴. Accordingly, private participation exceeded the 10 per cent threshold even in the cases of NBG and Piraeus banks.

No other policies concerning the governance of Greek banks were introduced by the third EAP.

Summarising the reforms to the governance of the banking system in the context of the Economic Adjustment Programmes for Greece, the first EAP did not include measures aiming directly to changing the governance framework of the Greek banks. But, a possibility of potential restructuring of a bank's governance was introduced at the beginning of this programme, with the founding law of the HFSF, in case of a recapitalisation by the Fund. Changes depended on the participation rate of the HFSF to the recapitalisation. Only in case it exceeded 90 per cent, the Fund's voting rights were in accordance to this share, otherwise these were limited. The main reason behind the limited participation was to avoid the State's interference to the management of the banks and keep it to the hands of the private sector. From this rationale emerges that since the launch of the first programme, there were concerns among the official lenders about potential government's interventions to the governance of the banking sector. This provision avoided a radical change of banks' governance after a recapitalisation, a development that could aggravate deposit outflows and further increase financial stability risks. Considering the timing of the first banks' recapitalisation from the HFSF, when the bail-in and the bank holiday in the Cypriot banking system took place (first semester of 2013), such dangers were highly elevated.

Almost at the beginning of the second EAP, the RFAs between the HFSF and recapitalised banks were established. These agreements safeguarded the HFSF's targets and rights, defined its role as a shareholder and provided the Fund with the ability to promote or enforce concrete strategies and governance arrangements. During the first semester of 2013, the HFSF law provision, concerning participation in the banks' boards in case of a recapitalisation was activated, in the context of the first recapitalisation. This led to the first change to the governance of the banking sector caused by programme policies.

The most important changes to the management of the Greek banks were brought at the beginning of the third EAP. First, the MoU explicitly stated that the government would not intervene in the management, decision-making and commercial operations of banks, including board member and senior management nominations. Second and most importantly, the HFSF implemented a thorough review of the boards and committees of the four systemic banks. What is more important is that the review was implemented with newly established, much stricter criteria ('fit-and-proper' rules). They also aimed to ensure the full independence of the banks that were recapitalised by the Greek government and prudent, highly capable, internationally experienced management, which was indispensable for banks to cope with the problems at the time and to limit the probability of another recapitalisation in the medium-term.

Thus, safeguarding the financial sector from political interference was a constant target of programme policies in this field.

3.5.2.2 Assessment of the effectiveness of the key corporate governance reforms

This subsection focuses on the assessment of the effectiveness of reforms to the governance of Greek banks. For this purpose, the views expressed during interviews with shareholders, the results of the Delphi survey, as well as reforms' evaluations by well-known international organisations (European Court of Auditors, IMF) and DG ECFIN and IMF programme reviews were combined.

²⁰⁴ DG ECFIN (2016). Compliance Report-The Third Economic Adjustment Programme for Greece – First Review, June 2016

One of the most significant programme policies concerning the governance of the financial sector, probably the most influential, was the 2016 evaluation of the boards' and committees' of the four systemic banks with the 'fit-and-proper' criteria. As was mentioned in subsection 4.5.1.1, it was carried out by the HFSF, with the assistance of Spencer Stuart consulting firm, but the relevant report is not accessible. Consequently, the recommendations of this assessment are not publicly available.

Nonetheless, regarding their implementation, the DG ECFIN report for the second review of the third EAP considered that the reconstitution process in the boards of directors led to a '*substantial overhaul of board compositions and new independent non-executive board members joining the boards*'²⁰⁵. Furthermore, '*the HFSF ensured that the minimum criteria of the HFSF law were consistently applied for replacements*'. The Ministry of Finance ensured that the same also holds for the State Representatives in the boards'. Thus, according to DG ECFIN, the implementation of the recommendations of this evaluation led to a substantial restructuring of banks' governing bodies, which strengthened the independence of the boards vis-à-vis the political system and former ownership of banks.

Earlier in the same year, the IMF noted that the legislation tightening eligibility for bank boards was yet to be fully implemented. Specifically, IMF commented that '*the authorities should implement their plans to fully reconstitute bank boards on the basis of revised eligibility criteria in line with prudent internal practices that go beyond supervisory 'fit-and-proper' criteria as defined by the SSM, so as to uproot the linkages between the Greek banks, politicians, and powerful vested interests*'²⁰⁶. Conclusively, in February 2017, the recommendations of the HFSF evaluation had not been implemented. Furthermore, the IMF considered their implementation necessary for confronting the State's and other interests' interference to the financial sector.

The need to keep clear boundaries between banks and the State during the EAPs is also highlighted in the literature. Haliassos et al.²⁰⁷ consider that 'State ownership of the banks (after the first recapitalisation) could have opened the door for interference by local politicians, with negative consequences for the allocation of credit and productivity growth'. In order to guard against these problems, they refer to the provisions of the MoU for the third EAP. According to them, 'they reduced the government's say in the HFSF, giving EZ representatives most of the decision-making power'. Next, they listed the 'fit-and-proper' criteria. While they assessed some of these measures as overly strict, 'such as when capable people with experience in the Greek banking system are excluded from key appointments in the banks', on the other hand they believe that 'they have had the beneficial effect of curbing interference by local politicians in the banking system. This represents a sharp break with the past'.

In the ex-post evaluation of its 2012 financial assistance program to Greece, the IMF considered that the 'imposition of a stringent 'fit and proper' standard for board members and management and other strict governance rules immediately after the PSI might have improved banks' governance faster, avoiding the need to police governance problems on a case-by-case basis'²⁰⁸.

A report published by the European Court of Auditors, examined the European Commission's management of the three EAPs for Greece. In relation to the ESM stability

²⁰⁵ DG ECFIN, 2017. Compliance Report-The Third Economic Adjustment Programme for Greece – Second Review, June 2017

²⁰⁶ IMF, 2017. 2016 Article IV Consultation-Press Release; Staff Report; And Statement by the Executive Director for Greece, February 2017

²⁰⁷ Haliassos, M., Hardouvelis, G., Tsoutsoura, M. and D. Vayanos (2017). Financial Development and the Credit Cycle in Greece. In *Beyond Austerity – Reforming Greece Economy*, ed. Meghir, C., Pissarides, C., Vayanos, D. and N. Vettas, 251-305. MIT Press.

²⁰⁸ IMF (2017). Greece: Ex-Post Evaluation of Exceptional Access Under the 2012 Extended Arrangement-Press Release; Staff Report; and Statement by the Executive Director for Greece, February 2017

support programme, the audit focused only on the design aspects. According to ECA, only the ESM programme included a condition on the evaluation of banks' corporate governance, for establishing stricter selection criteria as regards the qualifications and experience of bank board members²⁰⁹. This provision aimed to 'tackle potential political or business interference'. But the report criticises the fact that 'criteria restricted the candidates to banking and financial expertise; such a requirement was not fully aligned with international practices and EU/SSM requirements, which, in principle, promote board diversity and collective knowledge.' Thus, although the reform was towards the right direction concerning eligibility criteria about banking and financial sector candidates, the ECA believed it should not have restricted the range of members of banks' governing bodies to those categories of corporates. Nevertheless, this assessment does not take into account the aim of the new, demanding selection rules to attract best-in-class experts in international banking, in order to help the banking sector in Greece with the multiple, significant problems it faced after 2015. These banking experts would prefer to be secured from the various conflicts of business interests evident in the boards of directors.

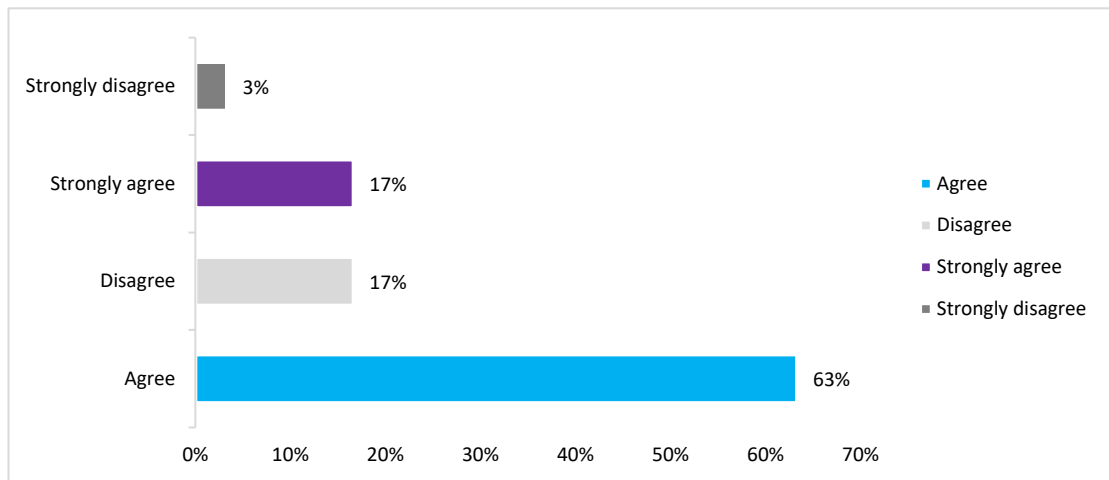
On the side of assessments of interviewees about the 'fit and proper' rules and the subsequent evaluation of the boards of directors of the banks, one of them, representing a Greek regulatory authority, said that the logic behind the new criteria was to replace the management teams, that were in charge of the Greek banks when credit expansion was high, a trend which later resulted in the increase of NPLs. Another interviewee representing a Greek regulatory authority, stressed that, taking into account how Greek banks were managed before crisis, that is, by families and individuals with strong presence and history in the banking sector, the fact that the HFSF acquired the right to evaluate the boards of directors of the recapitalised systemic banks, was a very meaningful change.

Also on the issue of eligibility criteria for the appointment of the management of the banks, one interviewee representing a Greek regulatory authority, stressed that something that was new and has not received much attention, is the fact that, in general, entrepreneurs, some of which have a very good view on businesses' needs from the banking sector, were totally excluded from the selection process. On his view, such an exclusion was an overreaction, because it led to the exclusion of some capable corporate executives from the selection process. For this reason, he assessed the criteria as being too narrow and too strict, thus significantly limiting the number of eligible nominees for the management of systemic banks. The same interviewee also said that, despite the criteria being strict, radical reforms could not be achieved if a signal of a significant change in the top management of the banks was not given. Given the restructuring that has taken place, the criteria needed to be revised and allow some staff from Greek businesses to participate to the boards of directors.

The responses to the Delphi survey about the 2016 evaluation of boards of directors and the related committees are in line with the conclusions of the above presented evaluations from international organisations. Specifically, the vast majority of respondents (80 per cent) agree/strongly agree that the *eligibility criteria for banks' Boards of Directors defined in the 'fit and proper' mechanism have been appropriate* (Figure 3.27). This share is 82 per cent, in the case of the sample of financial sector experts. Thus, this part of respondents also strongly embraces changes brought to the top-level management of banks with the 'fit and proper' rules.

²⁰⁹ ECA (2017). Special report No 17/2017: The Commission's intervention in the Greek financial crisis, November 2017

Figure 3.27 Delphi survey – whether the eligibility criteria for banks’ Boards of Directors defined in the ‘fit and proper’ mechanism (Laws No. 4340/2015 and No. 4346/2015) have been appropriate

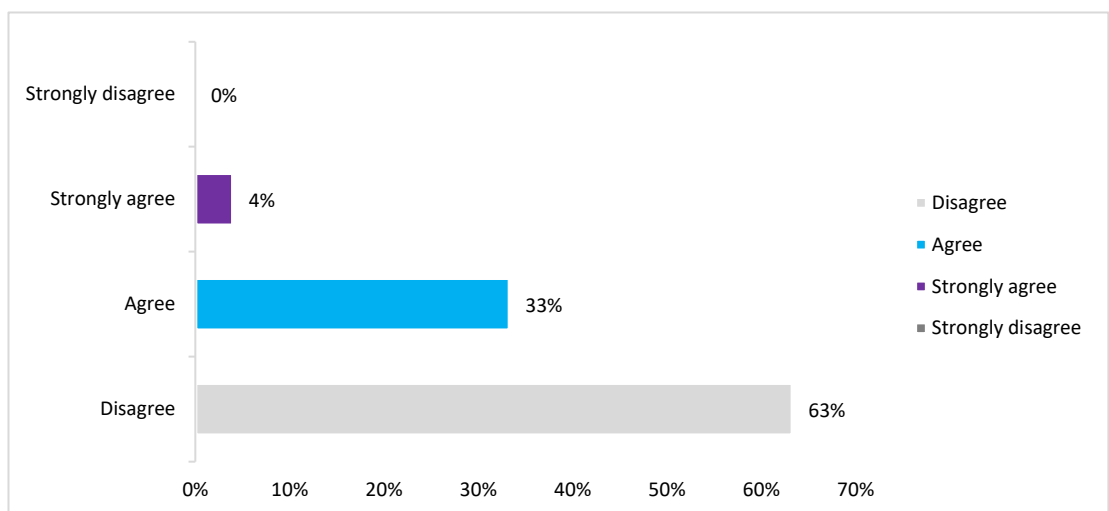


Source: Delphi survey, N=30

An expert from the financial sector expressed the view that the HFSF was in general well governed, but she supported that it should have introduced the ‘fit and proper’ criteria immediately after the PSI. Yet, one respondent supported the view that the eligibility criteria were not appropriate. He considers that because of them, a number of directors with little or no knowledge of the idiosyncrasies of the Greek economy and business environment, who did not have a better CV or experience than the previous Greek directors took important positions in Greek financial sector.

The participants to the Delphi survey are not in favour of a more drastic role of the HFSF to the management of the banks. About 63 per cent of all experts disagree/strongly disagree with the view *that the HFSF should have played a more active role in the governance of four systemic banks regarding the appointment of the management* and only 37 per cent agree/strongly agree with this view (Figure 3.28). Experts from the financial sector mostly disagree with this view, as their percentage is 56 per cent, against a 44 per cent that agrees.

Figure 3.28 Delphi survey - Do you believe that the HFSF should have played a more active role in the governance of four systemic banks regarding the appointment of the management?



Source: Delphi survey, N=30

Regarding in general the efficiency of the EAPs' policies concerning the governance of the banking sector in Greece, about those for the second programme, the IMF concluded that: 'while conditionality on governance of the banks and of the state-owned recapitalisation vehicle (the Hellenic Financial Stability Fund, or HFSF) was nominally met after the PSI, close links between the senior leaders of the banks, political parties, and large corporations were not broken for political reasons. This may have negatively affected banks' ability to attract capital and cope with rising asset quality problems²¹⁰.' Consequently, during the second EAP, no substantial changes took place in the management of the banking system.

With respect to the financial sector reforms during the first two programmes, the ECA report mentioned above criticises the fact that although 'governance-related problems (e.g. lending to related parties on non-market terms) existed well before the crisis, as Greek banks' corporate governance was, on average, considerably inferior to that of their European counterparts from the outset', nevertheless 'the (first) programme itself did not include conditions to enhance bank governance.' However, this evaluation seems to downplay some significant changes in case of a bank recapitalisation from the HFSF that were initiated with its founding law in 2010, as well as after the start of the second EAP, presented in section 4.5.1.1 (participation of the HFSF to the BoD of a recapitalised bank, RFAs between the Fund and banks).

Regarding developments in the management of banks during the second programme, ECA considers that 'contrary to international practice, changes of ownership that led in 2013 to the almost full nationalisation of the domestic banking sector were not reflected on most bank boards'. This is because 'the second programme provided that the four largest Greek banks ('systemic') would be recapitalised mostly by programme funds via HFSF but without ensuring sufficient scrutiny of their private management.' Thus, ECA's views on the changes to bank management in the context of the second EAP are broadly in line with those of IMF, considering them to be poor. Neither evaluation takes into account the rationale behind the limited role of the HFSF in the recapitalised banks' governing bodies, analysed in section 4.5.1.1 (keep State interference at arms' length, attract private investors).

With respect to HFSF's limited powers to the recapitalised banks' boards of directors, one interviewee, representing a Greek government organisation and another, from a Greek regulatory authority, supported that one of the intentions during the design of the statute of the Fund was to act as a backstop mechanism against nationalisation. There was no intention to interfere to the management of the banks. This approach was considered by another interviewee, representing a Greek regulatory authority, wrong. Specifically, he considered that this framework was used by the Fund as a way of being completely absent from the involvement in the banks and steering the direction of their restructuring. One interviewee, from a Greek regulatory authority, stressed that there have been some issues regarding the communication of the role of the HFSF as a shareholder in Greek banks and that the Executive Board of the Fund should have communicated this role in a more proper way.

Two interviewees, one from the financial sector and one representing a Greek regulatory authority, believed that corporate governance was not the problem of the Greek banks at the outset of the crisis, but the whole system was problematic (e.g. legal system, bankruptcy law). The first of them stressed that banks neither adapted their function nor adjusted their cost structure to the facts of the crisis. It should be noted, however, that this evaluation does not appropriately take into account the restructuring plans implemented by the Greek banks as a consequence of the first recapitalisation. Furthermore, he was not sure whether banks were consolidated and adjusted in the way this should have been done, as the consolidation process led to a huge destruction of their

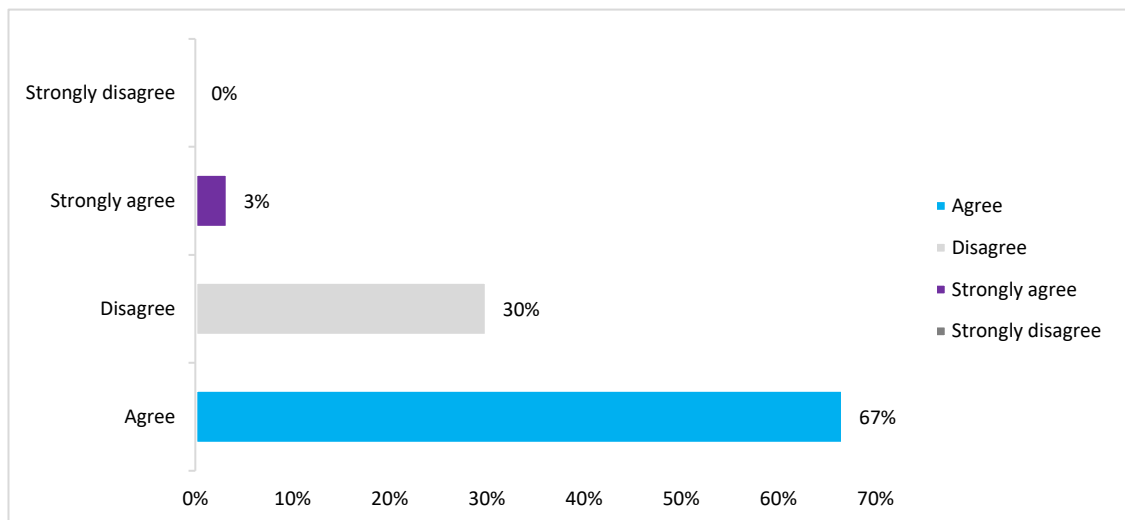
²¹⁰ IMF, 2017. Greece: Ex-Post Evaluation of Exceptional Access Under the 2012 Extended Arrangement-Press Release; Staff Report; and Statement by the Executive Director for Greece, February 2017

value, in comparison with banks in other countries. Nonetheless, he considered that nowadays the bank management is better than before the EAPs.

Many interviewees hold the view that the existence of the HFSF resulted in the improvement of the governance of Greek banks. Specifically, because of its participation, things now are more transparent taking into account the starting point. Thus, the creation of the HFSF was a significant achievement with respect to the governance of banks. An interviewee from the institutions stressed that the Fund could have played a most significant role in improving governance of the banking sector, but this was not possible due to political reasons.

Regarding the interference of the HFSF to certain issues that affected the banking sector during the EAPs, 70 percent of experts agree/strongly agree that *the HFSF should have played a more active role in the governance of four systemic banks regarding the NPLs management policy*, whereas those that disagree/strongly disagree is only 30 per cent of the sample (Figure 3.29). These shares are practically the same in the financial sector subsample (69 per cent and 31 per cent, respectively).

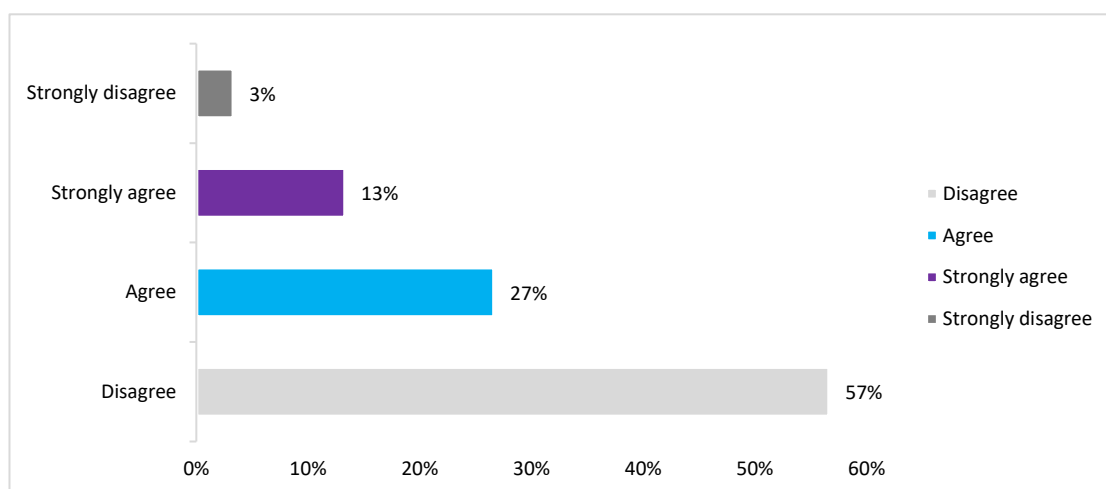
Figure 3.29 Delphi survey - Do you believe that the HFSF should have played a more active role in the governance of four systemic banks regarding the NPLs management policy?



Source: Delphi survey, N=30

In addition, 60 percent of experts disagree/strongly disagree with the view that *the HFSF should have played a more active role in the governance of four systemic banks regarding the credit supply policy* and only 40 per cent of them agree/strongly agree with this view (Figure 3.30). In the financial sector experts' subsample the share of experts that disagree/strongly disagree is higher, reaching 69 per cent and the rest 31 per cent agree/strongly agree with this view.

Figure 3.30 Delphi survey - Do you believe that the HFSF should have played a more active role in the governance of four systemic banks regarding the credit supply policy?



Source: Delphi survey, N=30

The European Court of Auditors report highlighted another aspect of the financial sector reforms. Specifically, ECA supported that they 'did not focus sufficiently on the governance and domestic supervision of less significant banks.' As an example of this was mentioned in the report that 'almost six years after the first programme was introduced, an on-site inspection by the BoG and the SSM in March 2016 revealed severe internal deficiencies in terms of governance, risk management and lending practices at one bank.'

To sum up the conclusions of international organisations' evaluations about key corporate governance reforms in the banking sector, as well as the views of stakeholders on them, although some caveats are highlighted, there is a wide consensus on the usefulness of implementation of the 'fit-and-proper' criteria, as well as on that they should have been implemented much earlier, after the PSI. Experts from the financial sector strongly supported the reform, in the context of the Delphi survey. It is considered as strengthening the independence of the boards vis-à-vis the political system and other vested interests. But, many sides suggest a broadening of the criteria, in order not to exclude corporate executives beyond the financial sector.

On one hand, the programmes' evaluations agree that little was done during the first two EAPs in order to evaluate and restructure the governing bodies of the Greek banks. This neglect may have negatively affected banks' ability to attract capital and confront asset quality problems. On the other hand, some of the interviewees stressed that the limited role of the HFSF in the banks, even after their recapitalisation was a result of the relevant provisions in its statute. Their purpose was that the Fund should act as a backstop mechanism against nationalisation.

Another aspect of the financial sector reforms is that they did not focus sufficiently on the governance and domestic supervision of less significant banks.

3.5.2.3 Description of the HFSF and of its role to the banking sector during 2010-2018

The creation of the (Hellenic) Financial Stability Fund was included in the conditionality for the first Economic Adjustment Programme for Greece. According to the first Memorandum of Understanding between Greece and its official lenders, 'the primary purpose of the FSF is to preserve the financial sector's soundness and thus its capacity to support the Greek economy, by providing equity support to banks as needed. Whenever supervisory assessments conclude that a bank's capital buffer might fall below adequate levels, the shareholders will be required to immediately bring additional capital or take bridging capital support from the FSF. If banks are then not able to expeditiously raise additional capital

on their own and repay the FSF, a restructuring process will take place under the lead of the FSF, in line with EU competition and state aid requirements²¹¹. In order to be able to fulfill this purpose, the HFSF was financed with EUR 10 bln, from the financing package of EUR 110 bln attached to the first EAP. In the founding law of the HFSF²¹² was defined that not only domestic credit institutions, but also subsidiaries of foreign credit institutions could receive aid from the Fund.

As already mentioned in section 4.5.1.1, in case the Fund participated to the recapitalisation of a credit institution with a share up to 90 per cent, it had the right to be represented to its board of directors by one member. This member had certain powers that are presented in the following subsection and indicate the degree of Funds potential interference to banks' governance. Only in case of a participation to a recapitalisation with a share higher than 90 per cent, the Fund's voting rights were in accordance to this share.

Another target during the establishment of the HFSF was that 'The Fund will have a strong governance structure and will as far as possible be independent of political influence'²¹³. This target highlighted issues of potential political interference in the past to the governance of the banking sector in Greece, as well as efforts from the part of the official lenders of the Greek State to tackle them. Annex 2 of the first MoU detailed the establishment of the Fund including the composition of its Governing Council. Specifically, the Fund was initially governed by a board of directors consisting of seven members, five of which were appointed by the Governor of the Bank of Greece, and the last two were ex officio members. Two non-voting observers, one from the European Commission and one from the ECB, were allowed to participate in the boards' meetings. In order to hold a position at the board of directors of the Fund, one could not be a stockholder, member of the board, manager, or consultant to a Greek or foreign credit institution. The ex-officio members held a position to the board for as long as they held the respective job position, while the other members could be dismissed with an act of the Finance Minister, following a proposal from the BoG Governor. These provisions of the HFSF law were in accordance with the relevant conditionality of the first MoU. Their revisions are presented in subsection 4.5.2.2.

In 2011 the mandate of the Fund was extended for the first time. Specifically, with Law No.4021/2011²¹⁴, the HFSF could provide capital into interim credit institutions. This amendment enabled the Fund to take its first action, which is presented below.

In 2015, with Law No.4340/2015²¹⁵, the mandate of the HFSF on issues regarding banks' governance expanded to the assessment of recapitalised banks' boards and their committees. As already presented in subsection 4.5.1.1, the HFSF proceeded in April 2016 to an emergency evaluation, in order to implement the newly established 'fit-and-proper' criteria. This review led to the overhaul of the boards of directors and significant changes to their compositions²¹⁶. Nonetheless, the Fund can proceed to such an assessment

²¹¹ DG ECFIN, 2010. The Economic Adjustment Programme for Greece, Occasional Papers 61, May 2010

²¹² Law No.3864/2010, Government Gazette 119 A', 21/07/2010. Available at: <http://www.hfsf.gr/files/legal/01.L3864.pdf>

²¹³ DG ECFIN, 2010. The Economic Adjustment Programme for Greece, Occasional Papers 61, May 2010

²¹⁴ Law No.4021/2011, Government Gazette 218 A', 03/10/2011. Available at: http://www.hfsf.gr/files/legal/04.L4021_am3.pdf

²¹⁵ Law No.4340/2015, Government Gazette 134 A', 01/11/2015. Available at: <http://www.hfsf.gr/files/legal/24.L4340am20.pdf>

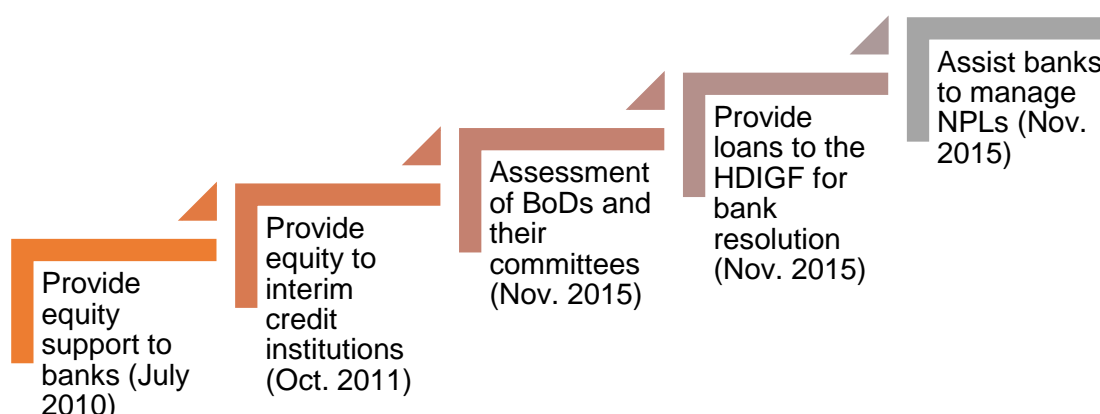
²¹⁶ DG ECFIN, 2017. Compliance Report-The Third Economic Adjustment Programme for Greece – Second Review, June 2017

whenever it deems it necessary. The HFSF carried out a second evaluation of the banks' governing bodies in 2017²¹⁷. Its implementation progress is reviewed in subsection 4.5.2.3.

With the same law, the competences of the HFSF were further broadened. Specifically, the Fund could provide loans to the Hellenic Deposit and Investment Guarantee Fund (HDIGF) for expenses associated with banks' resolution purposes by the HDIGF. This extension of the mandate was introduced by the conditionality for the third programme. The same holds for another adding to the competences of the Fund. With the same law, the Fund could help credit institutions to the management of the non-performing loans.

The evolution of the main changes to the mandate of the HFSF regarding its competences vis-à-vis the credit institutions is presented below (Figure 3.31).

Figure 3.31 Evolution of the role of the HFSF regarding credit institutions



Up to September 2011, the HFSF had taken no action. While it had been operating since October 2010, up until July 2011 staffing was proceeding more slowly than planned²¹⁸. In October 2011, the Greek Ministry of Finance announced its decision to establish an interim credit institution, called New Proton Bank, and to transfer the Proton Bank's good assets and deposits to it. The HDIGF covered New Proton's funding gap. After the change to its mandate with Law No.4021/2011, the Fund provided capital to New Proton Bank, in order to bring it in line with the capital adequacy requirements and thus became its sole shareholder²¹⁹.

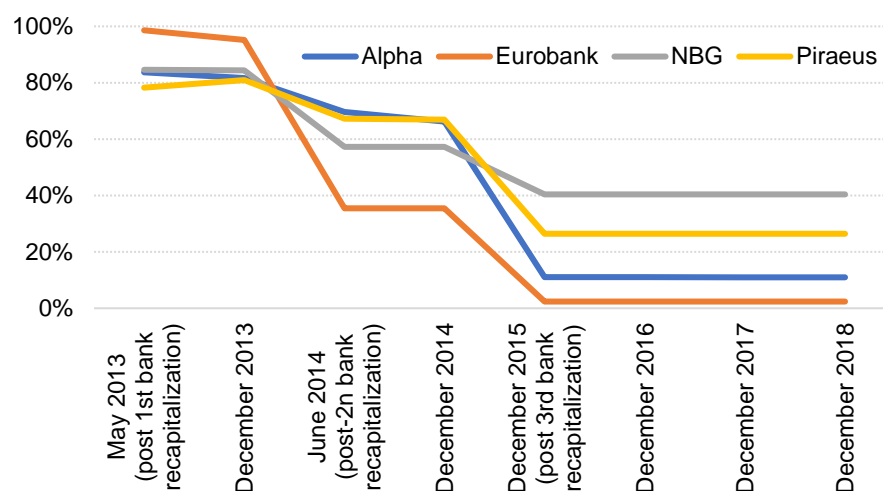
At the beginning of the second EAP, in February 2012, another EUR 48.8 bln from a total EUR 144.7 bln of financing were earmarked for bank recapitalisation. After the PSI and the public debt buyback in 2012, during January – June 2013 period the first bank recapitalisation was implemented. NBG, Alpha and Piraeus banks managed to raise more than 10 per cent of their required capital increase. The HFSF contributed the remaining amounts, which for the three banks totaled to EUR 18.6 bln. Eurobank opted for full recapitalisation via the HFSF and the Fund injected EUR 5.8 bln into it, becoming the main shareholder with full voting rights. Overall, the HFSF participated to the first recapitalisation with EUR 24.4 bln and became the main shareholder in all four banks. The stock shares held by the Fund after the first recapitalisation are depicted in Figure 3.32.

²¹⁷ The contractor requested the report of the evaluation from the HFSF. It was not provided on the basis that it contains highly sensitive information including personal assessments of individual banks BoD members.

²¹⁸ DG ECFIN, 2011. The Economic Adjustment Programme for Greece – Fourth review, Occasional Papers 82, July 2011

²¹⁹ DG ECFIN, 2011. The Economic Adjustment Programme for Greece - Fifth review, Occasional Papers 87, October 2011 and HFSF, 2012, Annual Report for the financial year from 21/07/2010 to 31/12/2011, May 2012

Figure 3.32 HFSF holdings of Greek systemic banks during 2013-2018



Source: HFSF annual reports

Following the completion of the Blackrock exercise in March 2014, the 'core' banks proceed to an increase of their share capital, in conjunction with other capital actions, in order to cover total capital needs of EUR 6.98 bln. The capital needs were fully covered by the private sector, which resulted to a decline of the stock share of the HFSF, especially in Eurobank. Accordingly, the Fund lost the full voting rights in this bank, which it had acquired after the first recapitalisation. A new capital shortage emerged after the significant decline of deposits in the first six months of 2015 and the sharp increase of non-performing loans. The results of the ECB stress test in October 2015 showed capital needs of EUR 14.4 bln for the systemic banks in the adverse scenario. The Fund participated to the recapitalisation of the NBG and Piraeus Bank by contributing ESM bonds, of fair value of EUR 2.7 bln in each case. The HFSF did not participate to the capital share increases of the other two banks. Given the abrupt decline during 2015 of the stock prices it held, the HFSF's share value was diluted in the cases of Eurobank and Alpha Bank, while it was no longer the main shareholder in the two other banks.

Up to the end of the third EAP no further capital needs for the 'core' banks in Greece emerged from stress tests conducted by the European Bank Authority in 2016 and 2018. The stock shares of the HFSF are unchanged since 2015.

Summarising, during the first EAP the HFSF took almost no action, as there were significant delays in its staffing. The HFSF's mandate initially focused on maintaining the capital adequacy of banks. Its participation to their governance was subject to a recapitalisation event. Even in such a case, if the Fund's contribution to the capital increase was not above 90 per cent, its powers were limited. The mandate of the Fund significantly broadened in 2015. The new competences included the evaluation of the members of the governing bodies of recapitalised banks, participation to banks' resolution process and facilitation of banks in dealing with the NPLs. The MoU for the third EAP introduced all of them, indicating the programme's intention to proceed to the restructuring of the governance of the banking sector and deal with some significant problems that had arisen (NPLs), by strengthening the role of the HFSF. During the period 2010-2018, the Fund exercised had its most strong impact on the governance of banks through the review of the members of their governing bodies in 2016.

3.5.2.4 Reforms of HFSF competence and governance

The powers of the HFSF in respect of the governance of the recapitalised Greek banks changed significantly since its foundation. Law No.3864/2010 provided that where the Fund participated in recapitalisation of a credit institution with a share of up to 90 per cent, its only representative on the bank's board of directors had a veto over decisions on dividend issuance and provision of amenities to managers and members of the board (bonuses were

prohibited) and on any decisions that could put an institution's solvency or liquidity at risk. However, given that the HFSF had since the first and up to the third recapitalisation a share greater than 50 per cent, these were very constrained rights. In the case of its participation in a recapitalisation with a share higher than 90 per cent, the Fund's voting rights were in accordance with its share.

The degree of participation in the management and decision-making of a recapitalised credit institution first changed with Law No.4051/2012²²⁰. The change reflects that where at least 10 per cent of the capital needs of a bank were covered by the private sector, the voting rights of the HFSF would be restricted to specific strategic decisions, such as the bank's structure (e.g. mergers, acquisitions), its charter and share capital. This amendment was prescribed in the second EAP, with the intention to ensure the *de jure* and *de facto* business autonomy of the recapitalised institutions²²¹. The veto rights remained unchanged. In cases where the terms of the Relationship Framework Agreement (RFA) between the respective institution and the HFSF were breached, or private sector participation was below the 10 per cent threshold, the Fund retained full voting rights. The most significant amendment came in Law No.4254/2014,²²² under which the HFSF assumed full voting rights for stock shares acquired by any subsequent recapitalisation, such as those from the 2015 recapitalisation. For stock shares acquired through recapitalisation prior to that, the HFSF voting rights remained limited if the private sector met the 10 per cent participation rate threshold. Consequently, the 10 per cent threshold - which was set to avoid political interference in the management of the banks and keep it in the hands of the private sector - was abolished for new recapitalisations in 2014.

The mandate of the HFSF was expanded for the first time in October 2011, with Law No. 4021/2011, which changed the bank resolution framework (see section 4.5.2.1). After this amendment, the HFSF could provide capital to interim credit institutions in case of a bank resolution and temporarily become the owner of this new 'good bank', until it was sold to a new owner.

After the conclusion of the second MoU in May 2012, the RFA between the HFSF and a recapitalised bank was established (see section 4.5.1.1). The RFAs were the only - albeit important - reform to banks' governance during the second EAP, as they defined the HFSF's role as a shareholder, notably in monitoring the implementation of the banks' restructuring plans and safeguarding the banks' operational independence. They also gave the HFSF certain approval and veto rights²²³.

2015 saw perhaps the most significant changes to the mandate of the Fund with respect to the banking sector. Those changes were included in the conditionality for the third EAP and were enacted by Law No.4340/2015. The most important reform - and one that significantly affected the governance of recapitalised banks - was that the Fund could evaluate the banks' boards of directors and related committees. The criteria for this process were defined by Law No.4340/2015 and became stricter under Law No.4346/2015²²⁴ (see subsection 4.5.1.1).

The same Law conferred another competence on the Fund, allowing it to provide loans to the Hellenic Deposit and Investment Guarantee Fund (HDIGF), for expenses associated with bank resolution. It could also help credit institutions in which it participated to manage

²²⁰ Law No.4051/2012, Government Gazette 40 A', 29/02/2012. Available at: http://www.hfsf.gr/files/legal/06.L4051_am5.pdf

²²¹ DG ECFIN, 2012. The Second Economic Adjustment Programme for Greece, Occasional Papers 94, p. 104.

²²² Law No.4254/2014, Government Gazette 85 A', 07/04/2014. Available at: <http://www.hfsf.gr/files/legal/22.L4254am18.pdf>

²²³ Ministerial Council Act 15 of 03-05-2012, Government Gazette 117 A', 04/05/2012. Available at: <http://www.hfsf.gr/files/legal/11.CA119.pdf>

²²⁴ Law No.4346/2015, Government Gazette 152 A', 20/11/2015. Available at: <http://www.hfsf.gr/files/legal/25.L4346am21.pdf>

NPLs. A special committee was created in the HFSF for this purpose, composed of members of the board of directors. The president was required to have at least five years' experience in risk management or NPL management.

The HFSF affected the governance of the banking sector through the numerous changes to its governing structure and the relevant election processes. Some of these reforms are considered highly significant in safeguarding the impartiality of the Fund.

More specifically, the provisions of Article 4 of the 'HFSF law', which concerned the governance of the Fund (see subsection 4.5.2.1), were first amended by Law No.4051/2012, in accordance with the conditionality for the second EAP²²⁵. The most significant change was the establishment of a two-tier management system, comprising a General Council and an Executive Board. Their respective duties were outlined in the same law. The Council consisted of five members, of which three should be managers with considerable international experience in banking, while the other two members were representatives of the Ministry of Finance and BoG. The Executive Board consisted of three members. The CEO and one other member were required to have considerable experience in banking, with the last member suggested by BoG. Considerable international experience was not further specified (e.g. duration, specific job position) for either body, nor were additional prerequisites set for the representatives of the Ministry of Finance and BoG. An electoral committee was established, tasked with selecting the members for these governing bodies, consisting of members from BoG and the Ministry of Finance, with (non-voting) observers from the European Commission and the ECB. Finally, the approval of the Euro Working Group was necessary for all members of both bodies, except for the representatives of the Ministry of Finance and BoG.

Further revisions to the structure of the governance of the HFSF came into effect with Laws No.4152/2013²²⁶ and No.4254/2014, which increased the independent members of the Council from three to five and then to seven. These changes were part of the reform conditionality for the second and the fourth review of the second EAP²²⁷. According to the DG ECFIN report for the fourth review, the intention was to 'strengthen the governance and internal procedures of the Fund'.

Another major amendment to the governing scheme of the HFSF came from Law No.4340/2015, which was based on the provisions of the MoU between the ESM and Greece for the third EAP²²⁸. A new procedure for the selection of the members of both the Executive Board and the General Council was added to the HFSF law (Article 4A). More specifically, the Selection Panel was established, comprising six members, three of whom were appointed by the EU institutions (including the Chair, who held the deciding vote in split votes), two by the Ministry of Finance and one from BoG. The Selection Panel replaced the Electoral Committee introduced by Law No.4051/2012.

To be nominated for the Selection Panel, candidates had to meet almost the same conditions as members of the Council and the Board. An additional clause introduced a three-year moratorium on the eligibility of former stockholders of any Greek credit institution. According to the MoU for the third EAP, this reform was intended to further assure the impartiality of the selection process through the greater involvement of the EU institutions. According to the same law, the Finance Minister appointed the members of

²²⁵ DG ECFIN, 2012. The second Economic Adjustment Programme for Greece. Occasional Papers 94, March 2012.

²²⁶ Law No.4152/2013, Government Gazette 107 A', 09/05/2013. Available at: <http://www.hfsf.gr/files/legal/20.L4152am16.pdf>

²²⁷ DG ECFIN, 2013. The second Economic Adjustment Programme for Greece - second review. Occasional Papers 148, May 2013; DG ECFIN (2014). The second Economic Adjustment Programme for Greece - fourth review. Occasional Papers 192, April 2014.

²²⁸ European Commission (2015). Memorandum of Understanding between the European Commission, acting on behalf of the European Stability Mechanism, and the Hellenic Republic, and the Bank of Greece, August 2015.

both bodies from a shortlist of candidates provided by the Selection Panel. Thus, the Finance Minister had a role in the selection process. This reform was also included in the MoU for the third EAP to Greece.

In addition to selecting the members of the Council and the Board, the Selection Panel was responsible for carrying out the evaluation and dismissal processes for members of both governing bodies. The creation of the Panel established an evaluation procedure for the HFSF governing bodies and facilitated the dismissal of members (previously within the purview of the Minister for Finance).

The eligibility criteria for nomination to the General Council and the Executive Board were altered by Laws No.4051/2012 and No.4254/2014, extending the 'conflict of interest' clause of the HFSF law to many categories of civil servants, particularly those of the Ministry of Finance, as well as categories of BoG employees. Consultants, managers and employees of Greek credit institutions were also considered as having an interest in the banks and were thus similarly excluded. An ownership threshold of 5 per cent of the capital share of a Greek credit institution was defined in Law No.4051/2012 also excluded a candidate from the General Council and the Executive Board, This threshold was reduced to EUR 100.000 by Law No.4254/2014. These changes to the eligibility criteria for the HFSF management were not part of the EAP conditionality.

The second EAP and the beginning of the third EAP thus saw reform of the role of the HFSF in the governance and evaluation of the recapitalised banks. These reforms sought to gradually strengthen the very limited (compared to the stock share it held) participation of the HFSF in the boards of directors of the recapitalised banks. The former initially targeted the replacement of long-standing management teams of the Greek banks, but also established a timely assessment process. Nevertheless, some of the criteria posed significant limitations to candidanship (see sections 4.5.1.1 and 4.5.1.2).

Amendments to the governance structure of the HFSF and the relevant selection processes aimed to limit political interference in the management of the Fund, as well as interventions from the banking sector domestically. In addition to being a breakthrough in governance practices in Greece, the Selection Panel is also viewed as an efficient policy action, based on its selection and evaluation processes. Although the Minister of Finance participates in the nomination of Selection Panel members, its impact on the selection process is limited.

3.5.2.5 Assessment of the role of the HFSF and impact of changes to its governance on the effectiveness of the banking sector

This subsection assesses the effectiveness of reforms to the competences of the HFSF and its governance on the efficiency of the banking sector. It is based on the views expressed during interviews with shareholders, the results of the Delphi survey, as well as evaluations of the reforms by well-known international organisations, and DG ECFIN and the IMF programme reviews.

According to the ECA report published in 2017, the 'original structure' of the HFSF's governance model – which was designed in the context of the first programme – 'did not lead to enhanced independence from the authorities'²²⁹. The report goes on to say that 'despite the second programme's condition that the HFSF should have a two-tier management structure (i.e. consisting of the General Council and the Executive Board), independence issues persisted'. The third programme addressed this weakness more appropriately, 'by focusing on the selection process for the HFSF's senior management', i.e. through the provisions of Law No. 4340/2015 on the selection procedure of the General Council and the Executive Board by the Selection Board.

Despite the 2015 reform of the selection process of HFSF senior management, the ECA did not believe that the solutions proposed by the second and third programmes ensured an efficient division of responsibilities and powers between the two decision-making boards.

²²⁹ ECA, 2017. The Commission's intervention in the Greek financial crisis, Special report No 17/2017, November 2017.

The transparency of the HFSF's decision-making process was an additional concern, with the ECA report noting that 'in 2013, the HFSF approved the sale of a majority stake in a bank subsidiary [the sale of New Proton Bank to Eurobank in July 2013] even though the transaction was not based on a competitive tendering process with multiple bidders'.

The reforms to the HFSF administrative structure led to frequent changes in the HFSF's senior management. The ECA referred to changes relating to '34 people in the first six years, including four chairmen and four chief executive officers' and noted that this practice 'entailed a risk of knowledge gaps and diminished influence in the banks in which HFSF held shares'.

Also in 2017, the European Commission published a report on the various national strategies put in place to counter the effects of the 2008 financial crisis²³⁰. The report sets out the various approaches followed to raise capital in the banking sector to strengthen its capital adequacy, including the provision of state aid. Where this approach was followed, the report stresses that 'while the State directly intervened to recapitalise banks in Cyprus, in Slovenia and partly in Portugal, specific intermediary institutions were set up to provide public support in Spain (FROB - *Fondo de Reestructuración Ordenada Bancaria*) and Greece (HFSF - Hellenic Financial Stability Fund). Those institutions have different levels of independence vis-à-vis the State, with the Spanish FROB having a board with a majority of government representatives, the other members being from the central bank, while in Greece the majority of the members of the Hellenic Financial Stability Fund were independent and selected by an independent body (Selection Panel)'. The assessment of the various strategies implemented by governments to provide financial support to banks found that the post-2015 reform of the administrative set-up of the HFSF was considered to be independent and selected through a meritocratic process. The same was not true of similar institutions created in other Eurozone countries after the 2008 crisis.

Continuing with the interview findings on the corporate governance of the HFSF, with respect to potential interference to it by the Greek government, one interviewee representing a Greek regulatory authority believes that there were instances where the Fund was influenced by the will of the government, for example in the process of reconstitution of the boards of directors of the banks in 2016. Despite this, the government did not impede the operations of the Fund generally. Another interviewee from a regulatory authority expressed the view that it was the HFSF multilayered structure/design that hampered its effectiveness, rather than political interference.

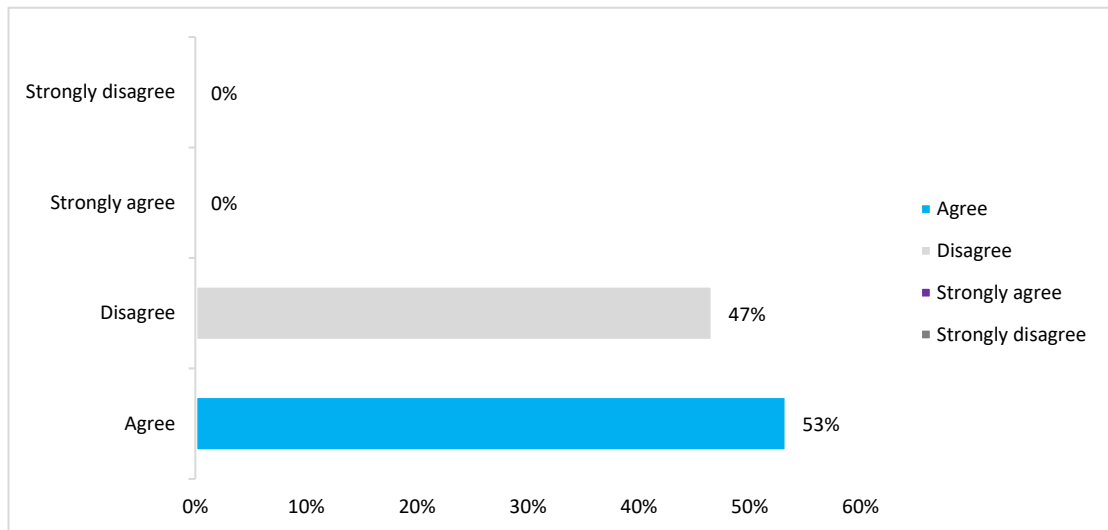
The vast majority of interviewees believe that the two-tier supervisory system introduced by Law No.4051/2012 was a novelty in the context of management practice in Greece, as particularly in the banking sector. An interviewee representing the institutions stressed that this governing structure allowed the institutions (through their representatives) to attend board of directors' meetings as observers between programme reviews. This allowed them to closely follow developments on crucial issues, such as bank recapitalisation and resolution.

Three interviewees representing a Greek regulatory authority believe that the 2015 amendment that introduced the Selection Panel was a move in the right direction, but the continued existence of the General Council along with the other two bodies, burdened HFSF management functioning and made it difficult to operate and make decisions. Two interviewees (one representing a Greek regulatory authority and one representing the institutions) believe that the growing mistrust between Greek authorities and the European Commission/ECB after 2015 left the HFSF without a CEO for over a year. The first of them noted that management of the Fund should have been leaner and thus more efficient, for example, a more flexible and effective CEO, overseen by the board of directors or the General Council.

²³⁰ European Commission (2017). Coping with the international financial crisis at the national level in a European context. Impact and financial sector policy responses in 2008-2015, Commission Staff Working Document, SWD (2017) 373 final, October 2017.

The Delphi survey results on the appropriateness of the HFSF governance model show that experts are divided on the question of whether the HFSF was well governed during the period 2010-2018. Overall, this view is held by 53 per cent and 47 per cent, respectively (Figure 3.33), while the sub-sample of the financial sector experts (N=16) are split into 56 per cent and 44 per cent, respectively. For example, one financial sector expert observed that the HFSF was well governed in general, while an academic expert believes that during the 2010-2018 period corporate governance was typically poor in the Greek banking system at the time, with the HFSF being no exception. He stated that the HFSF could have played a more active role had they had the necessary staff expertise.

Figure 3.33 Delphi survey - Was the HFSF well governed over the period 2010-2018?



Source: Delphi survey, N=30

As far as the contribution of the HFSF in monitoring and evaluating credit institutions is concerned, as already mentioned in subsection 4.5.2.1., the Fund carried out a second evaluation of the banks' governing bodies, which was completed in September 2017. Although this report is not accessible, for reasons specified in the same subsection, the corresponding press release stated that 'there is significant improvement in the bank boards' composition, skills and focus. Additional actions are needed for the enhancement of risk culture and internal control framework in order to further stimulate organisational transformation'²³¹. No further information was provided on the results of the review. Some of the DG ECFIN compliance reports for the third EAP and the reports in the context of the Enhanced Surveillance process that succeeded the EAP, as well as some IMF reports, refer to the recommendations of the second evaluation and to their implementation progress (see Box 3.12).

²³¹ HFSF, 2017. Press release on the review and evaluation of the governance framework and performance of the Board of Directors of the Greek Systemic Banks, September 2017. Available at: http://www.hfsf.gr/files/announcement_20170918_en.pdf

Box 3.12 Key findings from reports on the implementation of the recommendations of the HFSF second review of the BoDs of the recapitalised banks

DG ECFIN (2018). Compliance report - the third Economic Adjustment Programme for Greece - third review, March 2018

DG ECFIN stated that the four systemic banks made important governance changes after the second review of their boards by the HFSF, and that the reconstitution process is materially complete. Only two board members remained non-compliant with the new HFSF law criteria, despite the Fund having made all reasonable efforts for their removal. 'This performance and governance evaluation provided specific recommendations and roadmaps for further governance improvements, focusing on the risk and audit committees of the banks, and aiming to establish in parallel an evaluation culture and discipline on a regular basis'. The report provided no information on progress on the evaluation and restructuring of these committees. Nonetheless, the fact that the four core banks made dramatic changes within a six-month period to their boards of directors, indicated a strong will for administrative reform.

DG ECFIN (2018b). Compliance report - the third Economic Adjustment Programme for Greece - Fourth Review, July 2018

With respect to systematic governance reform, the report found that 'more work will need to be done, primarily by the banks themselves, to further enhance their governance standards and practices'. The latest evaluation 'provided specific recommendations for further governance improvements, which the banks are currently implementing' aiming, among others, 'at improvements in risk culture, implementing succession plans, developing robust and comprehensive NPL sales policies, aligning risk appetite frameworks with business strategies, developing a merit-based performance culture and linking performance with risk-adjusted remuneration'. Again, however, the report provided no information about the implementation of these recommendations.

DG ECFIN (2018a). Enhanced Surveillance Report, Greece, Institutional Paper No 090, November 2018

'As of May 2018, out of the total 169 recommendations provided to the four banks, 65 (38 per cent) were already closed and 89 (53 per cent) were in progress'. This is the first quantitative evaluation of the implementation of recommendations of the 2017 HFSF banks' governance review.

DG ECFIN (2019). Enhanced Surveillance Report, Greece, Institutional Paper No 099, February 2019

'As of December 2018, out of the 175 recommendations, 106 (61 per cent) were closed and 62 (35) were in progress'. DG ECFIN thus suggest that during the second semester of 2018, there was significant progress in implementing the recommendations of the second HFSF review.

There is no reference to the implementation of HFSF's second review of banks' governance in the three subsequent Enhanced Surveillance reports that were published up to February 2020. Thus, there is no evidence if or when the recommendations of the review were fully implemented.

IMF (2018), Greece, 2018 Article IV Consultation and Proposal for Post-Program Monitoring, July 2018

'Bank governance has improved (boards and senior management have been strengthened), but more is needed to ensure compliance with best practice standards.' Subsequently, the IMF considered that the second HFSF assessment improved banks' governance but other policy actions are needed in order to reach international standards. More specifically, 'the Bank of Greece and the SSM should increase their follow-up of progress in bank internal governance and related supervisory action, aiming to address

important operational deficiencies and loopholes in: (i) the internal control environment; (ii) the risk management framework; and (iii) the governance of NPL management and performance practices.' Evidently, the IMF urged the BoG and the SSM to take more action in specific directions.

IMF (2019c), Greece, First Post-Program monitoring discussions, March 2019

'Further efforts to restore banks' capacity for organic capital generation, including additional cost efficiency steps and measures to strengthen banks' internal governance, would help to boost resilience and prospects for new private capital.' Again, the IMF highlights the need to improve banks' internal management in order to improve efficiency.

IMF (2019b), Greece, 2019 Article IV Consultation, November 2019

'Staff advised that stronger internal governance would help improve new loan pricing and other business decisions and asset liability management. Business plans should target more ambitious core profitability, with emphasis on increased operating income (e.g., fee-generating business and digital banking products and services) and cost-cutting.' The IMF focuses once again on internal management issues of the banking sector.

Proceeding to the views of interviewees about the role that was assigned to HFSF in aspects of monitoring and evaluating credit institutions, one interviewee, representing a European regulatory authority, believes that the HFSF should have had a more independent structure, as well as more voting rights in the recapitalised banks during the second EAP (the Fund's structure became more independent under the third programme). One interviewee representing a Greek government authority, and another from the institutions, shared the view that the Fund was a backstop mechanism rather than an investor. Another interviewee from a Greek regulatory authority noted that the Fund was acting like a minority shareholder despite being a majority shareholder, which created a number of problems. This stance may have been designed to give incentives to the private sector or it may have indicated some mistrust on the part of the HFSF. The same interviewee agreed that the relative newness of the HFSF meant that BoG was much more involved in the recapitalisation process. Another role of the Fund since 2011 was to be the owner of the 'good bank' in the case of a bank resolution and to increase its equity, while the national resolution authority, through the use of the resolution scheme of HDIGF, which -unlike the HFSF- was funded by contributions of the participating banks, would deal with any arising funding gap²³². However, it soon emerged (2012) that the resolution compartment of the HDIGF could not cover the funding gap, resulting in an amendment to the HFSF law in the same year, so as the latter to be able to provide capital for this purpose. Ideally, the resolution scheme of the HDIGF would have been able to close the funding gap and take the proceeds of liquidation of the residual entity, i.e. of any remaining assets sent for liquidation.

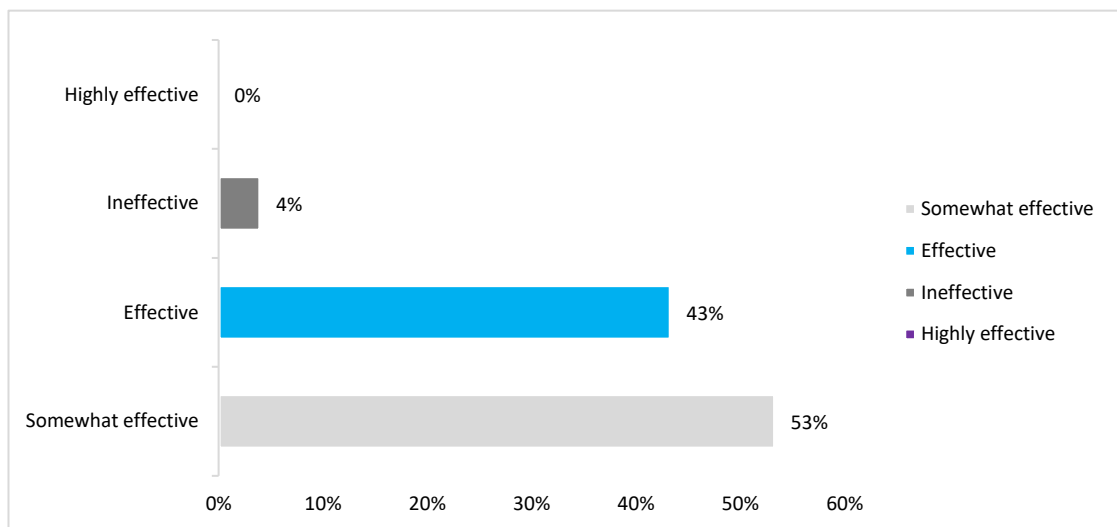
With respect to the involvement of the HFSF in the recapitalisation of Greek banking system, almost all interviewees agreed that the establishment of the HFSF and its involvement in this process was the right decision. Five interviewees noted that the Fund played a strong constructive role in designing the recapitalisation. It also managed public shareholding in a more professional and independent way (compared to the Ministry of Finance) and provided the appropriate tools to solve problems. Finally, it worked cooperatively with other stakeholders (i.e. BoG, European institutions, investment community) and consultants (Deutsche Bank, Rothschild). However, one interviewee representing a Greek regulatory authority held a different view, believing that the HFSF was inefficient in implementing the recapitalisation, as it was passive and sought to limit its responsibilities.

²³² With a contribution by the deposit cover scheme of the HDIGF, in case the transferred assets did not suffice to cover the value of covered deposits transferred.

Regarding the involvement of the HFSF to bank resolutions, one interviewee representing a Greek regulatory authority stressed that, as per the HFSF founding law, its role in this issue was never very clear. He noted that the Fund's management tried – and failed - to solve this problem by taking legal opinions. Some HFSF members wanted the Fund to be more actively involved in such procedures, while others chose to stay narrowly within the HFSF law framework.

The Delphi survey results on the HFSF's contribution to monitoring and evaluating credit institutions show that almost all experts (96 per cent) believe that the role of the HFSF in monitoring and evaluating banks to which it provided capital aid was effective/somewhat effective, with only 4 per cent believing it was ineffective (Figure 3.34). The financial experts unanimously held that it was effective/somewhat effective, indicating wide acceptance of the supervisory role of the Fund by those affected.

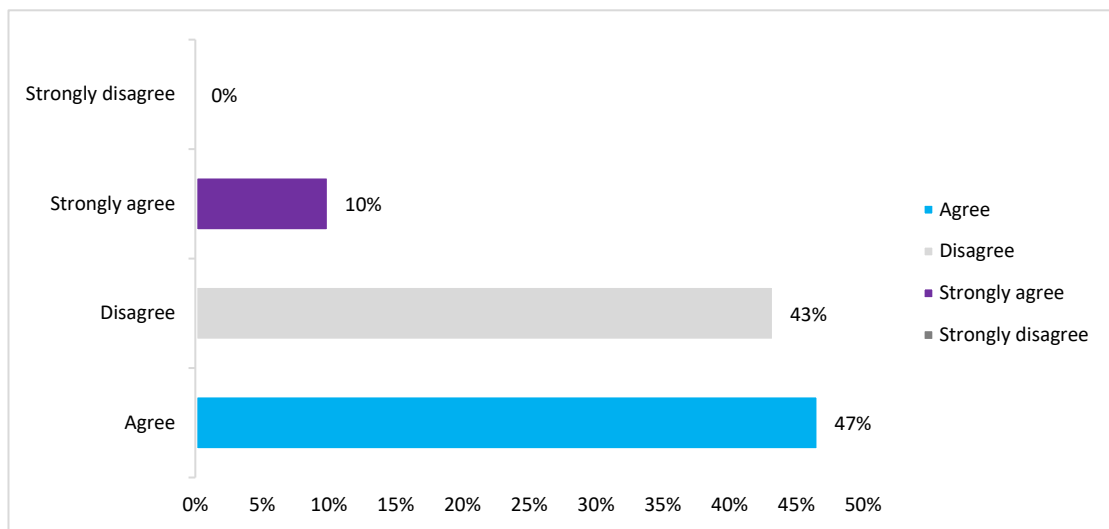
Figure 3.34 Delphi survey - How effective was the contribution of HFSF in monitoring and evaluating credit institutions that have received capital aid?



Source: Delphi survey, N=30

57 per cent of all experts agreed/strongly agreed that the HFSF should have been a more active shareholder in steering the restructuring effort in four Greek systemic banks given its majority shareholder position in them following the first recapitalisation. The remaining 43 per cent disagreed/strongly disagreed with this view (Figure 3.35). These shares are almost identical in the financial sector experts sub-sample (56 versus 44 per cent).

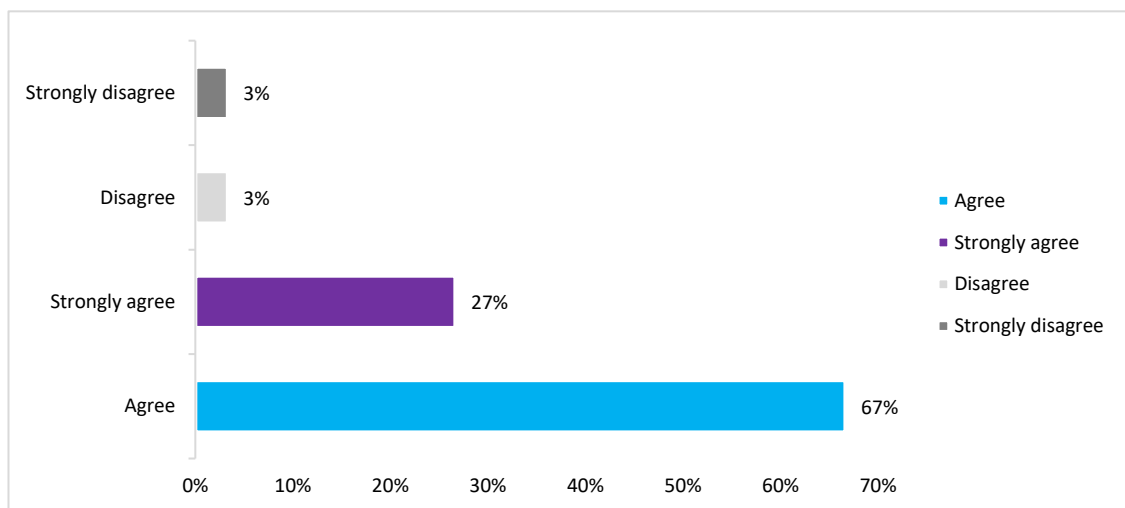
Figure 3.35 Delphi survey - Given the majority shareholder position in four systemic banks following the first recapitalisation, the HFSF should have been a more active shareholder in steering the restructuring effort in these banks



Source: Delphi survey, N=30

The Delphi survey found that almost all experts (94 per cent) agreed/strongly agreed that it was appropriate to channel public resources via the HFSF under the first recapitalisation in order to prevent nationalisation of the Greek banking sector (Figure 3.36). This share increases to 100 per cent among the financial sector experts.

Figure 3.36 Delphi survey - It was appropriate to channel public resources via the HFSF under the first recapitalisation in order to prevent nationalisation of the Greek banking sector



Source: Delphi survey, N=30

In summary, the impact of the HFSF on the efficiency of the banking sector, as well as subsequent changes to the Fund's governance that saw it acquire the right to evaluate the boards of directors of the systemic banks, was considerable and meaningful. According to DG ECFIN, the second evaluation of the boards of directors by the Fund led to important governance changes in the four systemic banks. It also provided recommendations for further governance improvements, NPL sales policies, succession plans and merit-based performance evaluations. The Delphi survey showed that almost all experts believed that the HFSF was effective or somewhat effective in monitoring and evaluating credit institutions.

Almost all interviewees agreed that the Fund's involvement to the first bank recapitalisation process was the right decision, with many considering it to have had a strong constructive role in the design of that process. Appreciation for the role of the HFSF during the recapitalisation is reflected in the Delphi survey, where the percentage of respondents who believe that the Fund should have been more active in steering the restructuring effort of the systemic banks after the first recapitalisation is highest of all the responses.

Regarding the views on the changes to the Fund's governance, the two-tier structure introduced in 2012, was considered a novelty in the context of management practices in Greece, while the introduction of the Selection Panel was seen as a reform in the right direction. Nevertheless, this multi-level structure was viewed by some respondents as complicating HFSF operations and decision-making. These differing views on the changes to the HFSFs' governing structure are reflected in the Delphi survey results, with experts divided on the question of whether the HFSF was well governed in the period 2010-2018.

Concerning interference issues of the State's to the HFSF functioning, despite the fact it could express its view via its representatives on all of the Fund's governing bodies, the interviews revealed that there were attempts to influence the members of the General Council. Some interviewees noted, however, that it was the HFSF's complex governance structure/design that hindered its effectiveness, rather than political interference.

The ECA assessed the HFSF's governance structure during the first two EAPs, noting that it faced significant independence issues from the authorities. The introduction of the Selection Panel was considered an effective way to deal with political interference.

According to the ECA, the transparency of the HFSF's decision-making process was also cause for concern.

4 Conclusions

The following section presents a summary of the key conclusions for each of the study question.

- Study question 1: To what extent did the programme analyse appropriately the banking sector risks existing before the 1st programme (including those related to banks' governance, business model, ownership structure, credit, provisioning and investment policies, asset and liability structure), with the information at hand at the time and given the international financial markets context?
- Study question 2: What were the main reasons behind the acute liquidity needs of the Greek banking sector throughout the entire three Programmes? How successful were the measures taken in maintaining liquidity, restoring confidence (investor, depositor, interbank), and protecting financial stability?
- Study question 3a: What were the main reasons for the significant capital losses of Greek banks? What was the impact of the Private Sector Involvement (PSI) on the Greek financial sector and banks in particular?
- Study question 3b: How effective were the measures taken under the programme to stabilise the sector and the individual banks (e.g. recapitalisations, bank resolutions) and restore adequate capitalisation?
- Study question 4a: What were the most important reasons behind the large and persistent increase in NPLs in Greece?
- Study question 4b: To what extent were programme policies adequate in limiting the initial build-up of the NPL portfolio, given the underlying conditions? Subsequently, were programme policies adequate in facilitating effective NPL resolution and reduction?
- Study question 5a: To what extent were programme policies adequate to improve the governance of Greek banks?

- Study question 5b: To what extent has the Hellenic Financial Stability Fund (HFSF) played an effective role in this regard?

4.1 Study question 1

- **Soundness of the Greek banking sector prior to the crisis:** Although not immune to the initial blow from the global financial crisis and with some underlying vulnerabilities, the Greek banking sector was generally considered to have sound fundamentals at the outset of the crisis and unlike in some other countries, in Greece the crisis did not originate in the banking sector;
- **Surveillance of the financial sector:** Prior to the financial crisis, the surveillance of the financial sector in the EU country surveillance system was less intensive. And this applied to Greece as well as other EU Member States;
- **Sources of information feeding into diagnostics:** The situation in Greek financial sector received greater attention of the institutions already in 2009, including BoG and IMF staff stress tests conducted in H1 2009 that subsequently fed into the conceptualisation of the first EAP. Furthermore, off-side diagnostics were subsequently complemented by technical missions of the European Commission, ECB and IMF staff that took place between January 2010 – April 2010. In addition, the institutions took appropriate and timely measures to strengthen the supervisory capacity of the BoG and increase the scope, frequency and granularity of the supervisory data as one of the first measures under the first EAP;
- **Type of data feeding into diagnostics:** Diagnostics prior to the first EAP were done mostly based on the publicly available data. Once the first EAP began, the use of supervisory data from the BoG e.g. daily reporting on liquidity positions of banks and data on NPLs became far more prevalent;
- **Coverage of risks in selected surveillance documents:** The study did not cover the BoG and institutions' diagnostics work of which results were not publicly available. Though, the review of some publicly available surveillance work of the BoG, European Commission and the ECB shows that the coverage of the comprehensive set of risks was not comprehensive enough, with some risks receiving no or only little coverage in the reviewed publications and some signs of underestimation of the gravity of situation in the Greek financial sector. Of the three, the IMF publications were the most comprehensive;
- **Sovereign banking feedback loop:** In retrospect, the risk stemming from the sovereign-banking feedback loop turned out to be one of the most critical factors affecting the liquidity and solvency of Greek banks. The key issues such as high exposure of banks to GGBs and implications of the deteriorating fiscal stance of the state were well understood by the institutions. However, the recognition of the full magnitude of this risk was delayed, partly due to an underestimation of the impact of fiscal consolidation measures on the whole economy that then trickled down to the banking system. More generally, the high exposure to GGBs was broadly acknowledged as a vulnerability factor *ex post*, but the discussions at that time had less focus on the reasons behind such higher exposure *ex ante*;
- **Constraints for the diagnostics:** Overall, the study did not find any major constraints to the analysis of the risks in the Greek banking sector prior to the first EAP, notwithstanding the issue of macroeconomic projections. While fiscal and national accounts data turned out to be inaccurate, this was not the case for financial data. The scope, frequency of the data provision and reliability of the available financial statistics underpinning diagnostics and provided by the BoG to the three institutions were found as adequate.

4.2 Study question 2

- **Key reasons behind the acute liquidity needs:** From 2009 when the Greek sovereign crisis erupted, Greek banks faced increasing liquidity pressures due to (i) downgrading which led initially to a limited access and later to a complete shut-down of wholesale market funding, (ii) uncertainty including double elections in mid-2012 and political uncertainty under SYRIZA government, and recurrent Grexit fears which led to an outflow of deposits, (iii) Collateral for participating in the Eurosystem's monetary policy operations took a hit both in value as well as in eligibility status;
- **Key measures allowing to maintain the liquidity and restore confidence:** Throughout the crisis Greek banks were heavily reliant on the Eurosystem to meet their liquidity needs, initially via the ECB's open market operations and overtime, via the ELA (as wholesale funding markets remained closed and banks' access to Eurosystem refinancing suffered due to a lack of eligible collateral. ELA funding was a major source of bank liquidity in 2012-13 and in 2015-mid- 2018, when it was also combined with capital controls (following the announcement of the referendum in June 2015). Access to ELA and the introduction of capital controls in 2015 were critical in preventing a collapse of the Greek banking system. There, however, remains a question mark whether the capital controls were justified over a four-year period, although the still fragile liquidity profile of Greek banks prior to 2019 suggested that there would have been a degree of risk for the authorities to lift the capital controls earlier.

4.3 Study question 3a

- **Banks' exposure to GGBs:** The exposure of Greek banks to GGBs was already high before the financial crisis, but it still kept rising in the run up to the PSI in 2012. This eventually amplified the direct impact of the PSI on Greek banks' balance sheet, albeit it should be noted that similar trend of domestic banks increasing their portfolio of government bonds during the initial stage of the crisis was also observed in other program countries and Greece was not an exception;
- **Explanation for 'home bias' of Greek banks:** There is no single explanation for this 'home bias' of Greek banks, though the existing evidence points to the government pressure as one of the most important factors. Likewise, the government pressure may also explain (to considerable extent) why Greek banks, contrary to foreign banks, did not benefit from the opportunity of the ECB SMP facility to offload the GGBs prior to the PSI. This sheds some light on the commonly raised (and contentious) question on why foreign banks (in particular French and German banks) reduced their exposure to Greek debt to a far larger extent than the Greek banks;
- **Main reasons for the significant capital losses of Greek banks:** PSI-related losses, reduction in the value of GGBs due to sovereign downgrades, impairment of the assets side of the banks' balance sheet because of NPLs, Grexit and related currency redenomination fears that led to deposit and funding outflows were among the key factors eroding banks' capital bases. In addition, banks' profitability was also severely affected by increases in the cost of funding, negative contribution of international operations of some banks and overall fall in volume of transactions;
- **Effectiveness of negotiations and execution of the PSI:** Most of the evidence suggests that the negotiations and execution of the PSI were relatively successful, despite exceptionally challenging environment and *sui generis* and complex character of the exercise. Timing of the PSI and the exclusion of some public bondholders are two specific issues that have attracted some criticism in the literature and throughout the consultation process;

- **Estimation of the direct impact of the PSI:** Although estimating the direct and precise impact of the PSI was possible only in early 2012 given ongoing negotiations on the terms of the PSI (including hair-cut level), conceptually the exercise was fairly straightforward. In view of the staff involved in the exercise, gauging the impact of the PSI on Greek banks was far less challenging compared to modelling other impacts e.g. potential losses of the loan portfolios due to recession and effective recovery rate of the collateral held by banks;
- **Direct impact of the PSI on banks:** As a result of the PSI, Greek banks experienced total losses of EUR 37.7 bln in their holdings of bonds (of which EUR 28.2 bln was held by four systemic banks) and other loans to the Greek state. This represented 10 per cent of their total assets, or 170 per cent of their total Core Tier I capital at that time, while the banks' provisions set aside for PSI-related losses were only EUR 5.8 bln. Therefore, banks net-of-provision losses from Greece's sovereign default were EUR 31.9 bln wiping out their capital base and leaving some of the largest banks insolvent and others seriously undercapitalised. In addition, PSI accounted (indirectly) for some of the projected losses on the banks' private sector loan portfolios due to its recessionary impact²³³. As a result of the PSI, the first recapitalisation was needed;
- **Direct impact of the PSI on pension funds and insurance companies:** The Greek pension funds suffered total losses of EUR 11.9 bln as a result of the PSI. Contrary to the banks, those were not recapitalized, though they kept receiving very sizable grant support from the state on the annual basis that offset the impact of the PSI. In turn, the estimated losses from the PSI to the insurance sector were in the range between EUR 2 bln and EUR 3 bln leading to some bankruptcies of smaller insurers;
- **Relative impact of the PSI on the market confidence:** While the PSI did have a negative impact on confidence in 2011 and 2012 contributing also to deposits' outflows, the evidence suggests that its effect was relatively contained and instead it was a political uncertainty related also to double-elections in May-June 2012 that was a primary factor behind the drop of confidence between mid-2011 and mid-2012;
- **Impact of the PSI on banks' credit ratings:** The PSI contributed to the downgrades of Greek banks and affected market confidence in the short-term. In the medium/long-term, however, the PSI could have some positive impact given the fact that it improved the fiscal stance of the state which in turn determines strongly the ratings of domestic banks;
- **Timing of the PSI:** From a macroeconomic perspective, it would have been beneficial to front-load the PSI with the perception of markets restored earlier, more limited contribution to the currency re-domination fears, larger stock of debt available for the hair-cut and consequent sizable savings for the state stemming from the high cost of borrowing and debt servicing. Majority of Delphi respondents and number of interviewees were of a view that PSI could have been better timed. Yet, there were also number of major constraints at the time that may provide some explanation why the PSI did not occur faster, such as (i) lack of political will to resort to sovereign debt restructuring while there was still hope that the programme would be sufficient to restore stability, (ii) concerns about the negative impact on the assets of social security funds, the banking sector (including contagion to other Eurozone members) and private investors in Greek government securities, (iii) moral hazard considerations, (iv) the lack of appropriate tools at EU level, and (v) the unprecedented scale and complexity of the PSI.

²³³ Reduced capacity of banks to lend.

4.4 Study question 3b

- **Approach to restructuring of the Greek banking sector:** The study found that an approach to restructuring the Greek banking system that hinged on the safeguarding of four systemically important 'core banks', while closing the weakest and poorly managed banks so that only sufficiently sound operations would get state support was sound;
- **Frameworks and resolution tools guiding the restructuring:** In terms of the frameworks and resolution tools guiding the design and implementation of the three recapitalisations and series of resolutions, there was limited formal material in place at the time of the first and second recapitalisation and initial resolutions. While the lack of comprehensive guidelines and resolution tools during the first and second recapitalisations did not offer the authorities and the institutions a clear path on how to proceed, it was not found problematic by the interviewed authorities and the three institutions' staff and it allowed considerable flexibility in designing the first and second recapitalisations and resolutions, something that would not have been possible following the introduction of the BRRD;
- **Estimation of the costs of the recapitalisations and resolutions:** Involvement of the BlackRock in the estimation of the credit loss projections for Greek banks under the first and second recapitalisation ensured higher transparency and reduced the risk of an interference in the exercise. In hindsight, capital needs of banks were somehow underestimated, but this was mainly a result of the prolonged and severe recession as well as some exogenous factors, such as uncertainty brought by SYRIZA government, that could have been hardly anticipated at the time when estimates were being derived. The study also found that had the first BlackRock AQR happened earlier than 2012, it would likely have added limited value, given the lack of clarity on the form and size of the PSI in 2010/ early 2011 and underlying inaccurate macroeconomic projections;
- **Financial stability of the Greek banking system:** Despite this challenging (and continuously uncertain) backdrop, the financial stability of the system was preserved, with 14 credit institutions resolved and four systemically important banks recapitalised. This was effected without the major disruption that would have been caused by disorderly bankruptcies or market jitteriness due to poor design or lack of swift and transparent implementation. Yet, banks remained fragile and for several years served their role as a channel of funding towards the real economy to a limited extent only;
- **Losses of private depositors:** In the Greek context, all of the individual depositors were preserved, irrespective of their size and type. The decision to stick to the policy decision to fully protect depositors while resolving 14 non-viable banks and recapitalising four others was warranted from a financial stability perspective and the task of achieving it should be acknowledged as one of the positive outcomes of the restructuring;
- **Cost of restructuring of the Greek banking sector:** Restructuring the Greek banks came at a very high cost, even though given the negative equity of virtually all banks following the PSI, it was well understood that the state would need to incur some losses to attract private investors. Under the third recapitalisation, the choice of recapitalisation with no effective minimum price set succeeded in minimising new taxpayer funding at the cost of complete dilution of the Greek taxpayers' existing stake in the four systemic banks. The extent of losses suffered is evident by the fact that the EUR 25.5 bln injected by HFSF in banks in May 2013 were worth EUR 747 mln in November 2015.

4.5 Study question 4a

- **Primary reason(s) behind the high and persistent NPLs:** The deepening recession and ongoing political uncertainty were the main factors behind the sharp rise in NPLs since the first quarter of 2012;
- **Other reasons behind the high and persistent NPLs:** other relevant reasons included insufficient work-out capacity of Greek banks, legislative changes which contributed to a deterioration of payment discipline (notably Katseli Law), weak payment culture, a lengthy and inefficiency judicial system; the lack of a secondary NPL market, absence of legal infrastructure for NPL resolution; and loose credit conditions prior to the crisis.

4.6 Study question 4b

- **Effectiveness of measures implemented:** A number of important reforms were implemented to reduce NPLs, including a strengthening of the supervisory framework by setting operational targets for NPL reduction, the creation of a secondary NPL market including e-actions, and the removal of various legal, judicial and administrative barriers to the management of NPLs. However, there with shortcomings in their implementation and the direct impact has been modest. For example, the use of OCWs and in-court restructurings by banks and borrowers remains limited. The underlying insolvency regime remains ineffective due to institutional inefficiencies and, in the case of household insolvency, poor legal design; the share of failed auctions remains high. Rather than scaling back primary residence protection, a mortgage subsidization scheme was adopted in April 2019 that perpetuates the weak payment culture;
- **Impediments to the NPLs resolution:** NPLs resolution was impeded by delays or lack of progress on significant NPLs reforms. The study found that there were diverging views regarding the timeliness of the program policies to tackle NPLs. Irrespective of that, the most important reforms related to NPLs began in 2015. Insufficient political will at domestic level to tackle NPLs decisively was an important factor in the Greek context, particularly prior to the third programme;
- **Turnaround in the NPLs resolution:** There have been some recent positive developments. The pace of NPL reduction has recently accelerated and the topic is high on the political agenda. The government has created a new Deputy Minister position to oversee bank reform. Banks have agreed more ambitious new NPL reduction targets (the Prime Minister has called for even further acceleration) and the 'Hercules' asset protection scheme has progressed;
- **Current outlook:** However, addressing NPLs will remain a challenge for some time and be important for supporting a sustained, robust economic recovery. A more ambitious and comprehensive strategy is required to tackle the issue.

4.7 Study question 5a

- **Corporate governance policies under the first EAP:** The first EAP did not include direct measures to change the governance framework of the Greek banks. Yet, according to the first MoU between Greece and the three institutions, the possibility of restructuring a bank's governance was introduced in mid-2010 with the founding law of the HFSF, in the event of a recapitalisation involving the Fund;
- **Voting rights of the HFSF:** Only in cases where the HFSF's stake in a bank exceeded 90 per cent were the Fund's voting rights in line with other ordinary shares, otherwise HFSF's rights were very limited. This was intended to avoid State interference in the management of the recapitalised banks. This suggests that from the launch of the first programme, the institutions were concerned about potential State intervention in the governance of the banking sector. The low participation of

the HFSF in banks' governance was also intended as a sweetener for private investors;

- **Corporate governance policies under the second EAP:** The establishment of the RFAs was the only – albeit important - reform to banks' governance during the second EAP. The RFAs and their amendments defined the HFSF's role as a shareholder, notably in monitoring the implementation of the banks' restructuring plans and safeguarding the banks' operational independence. They also gave the HFSF certain approval and veto rights. Also, the 2010 HFSF law provision concerning participation in the banks' boards in case of a recapitalisation was activated in the context of the first recapitalisation of the four systemic banks (first semester of 2013). This was the first case of an explicit change to the governance of a bank stemming from the programme policies;
- **Progress in corporate governance reforms under the first two EAPs:** The programmes' evaluations conducted by the IMF and ECA concluded that little was done during the first two EAPs to evaluate and restructure the governing bodies of the Greek banks. The IMF believes that this may have negatively affected banks' ability to attract capital and confront asset quality problems (e.g. rising NPLs). The study confirmed that few policies targeting the restructuring of the management of the banking sector were designed or implemented during the first two EAPs. On the other hand, some of the stakeholders interviewed noted that the limited role of the HFSF in the governing bodies of the banks, even after their first recapitalisation, was a result of the relevant provisions in its statute. Their purpose was that the Fund should act as a backstop mechanism against nationalisation. Other purposes were to attract private investors and avoid increasing uncertainty among depositors and investors from a radical change of banks' management;
- **Progress in banks' corporate governance reforms under the third EAP:** The most important changes to the management of the Greek banks came at the beginning of the third EAP, through the HFSF review of the boards and committees of the four systemic banks, with newly established and strict criteria (so called 'fit-and-proper' rules);
- **Relevance of 'fit and proper' rules:** Although some changes were suggested, there is widespread consensus in the literature, among the stakeholders interviewed and the Delphi panel on the relevance of the 'fit-and-proper' criteria. They are considered to have strengthened the independence of the boards vis-à-vis the political system and vested interests. Another purpose was to staff the boards of directors with members highly experienced in international banking, which would help banks to confront the multiple problems they faced at that period;
- **Principle of the State at arm's-length:** The policies concerning the financial sector throughout the three EAPs clearly show that safeguarding banks' corporate governance from political interference was consistently prioritised across the three programmes.

4.8 Study question Q5b:

- **HFSF's statutory role in banks governance:** Since its foundation, the HFSF's mandate focused *de facto* on maintaining the capital adequacy of banks rather than participating actively in their governance. During the first EAP, the Fund took almost no action and had no role in the management of banks;
- **Governance structure of the HFSF during the second EAP:** At the beginning of the second EAP, the HFSF's governance was modified, with the introduction of the two-tier structure (General Council - Executive Board). The interviewees considered this reform a novelty in the context of management practices in Greece, including the banking sector. This was dictated by the need to reduce the risk of political interference in HFSF functioning;

- **Degree of involvement of the HFSF:** Most Delphi survey participants agree that the Fund's limited active involvement in the management of recapitalised banks through their voting-veto rights, was the right decision. However, most also feel that the Fund should have been more active in steering the restructuring effort of the systemic banks after the first recapitalisation. The study findings support the idea that this could have been achieved in part through either the RFAs or their amendments;
- **Reforms to the HFSF's role under the third EAP:** The competences of the Fund broadened significantly as a result of the third EAP, including aspects such as evaluation of the members of the governing bodies of recapitalised banks, participation in banks' resolution processes, and supporting banks in dealing with the NPLs;
- **Rearrangement of the HFSF role in the banking sector:** The study considers the assignment of competence in restructuring the governance of the banking sector and addressing some key problems (e.g. resolutions, NPLs) to indicate the intention of the third programme to strengthen the role of the HFSF rather than assign more competence to other authorities, such as the BoG;
- **Governance structure of the HFSF during the third EAP:** The introduction of the Selection Panel into the HFSF's structure was seen as a reform in the right direction (some interviewees, the ECA, European Commission), given that it enhanced independence from the authorities. Nevertheless, this modification apparently reduced the efficiency of HFSF proceedings;
- **Most impactful reform(s) to banks' governance:** The study considers that during the period 2010-2018, the Fund's strongest impact was on improving the efficiency of banks' governance through the review of their governing bodies in 2016, with the 'fit-and-proper' criteria;
- **HFSF's role in recapitalised banks throughout the EAPs:** The study found that the HFSF impacted banks' governance mainly through certain processes (e.g. evaluation with the 'fit-and-proper' criteria), with participation as a shareholder in their governing bodies proving far less significant.

Annex 1 Methodological approach

A1.1 Study design

The study was designed to respond to a specific set of questions, as set out in the Terms of Reference. A step-by-step methodology was developed to guide the choice and design of specific research methods, as well as to provide a framework for subsequent data analysis and interpretation (see Figure A1.1). It considered:

- The questions addressed by the study;
- The evidence required to answer each study question;
- The data sources and methods used to compile the required evidence;
- The judgement criteria on which the study conclusions are based.

Figure A1.1 Overview of the step-by-step methodology



Source: ICF

A1.2 Methods and data sources

Table A1.1 below provides a high-level overview of the data collection methods and analytical techniques used to address each study question. The application of each of these methods is described in the sub-sections that follow.

Table A1.1 Overview of the methods and techniques used for the study

	Q1	Q2a	Q2b	Q3a	Q3b	Q4a	Q4b	Q5
Document and data review	●●●	●●●	●●●	●●	●●●	●●	●●	●●
Key informant / stakeholder interviews	●●	●●	●●	●●●	●●	●●●	●●●	●●●
Delphi survey	●	●	●	●	●	●	●	●

●●● very important method for addressing the study question

●● important method for addressing the study question

● complementary method

A1.2.2 Document and data review

Table A1.2 provides an overview of the main publicly available documentation collected and reviewed, together with their usefulness. A full list of reviewed documentation is available in Annex 3.

Table A1.2 Overview of documentation reviewed

Source of documentation	Type of documentation	Usefulness
European Commission, DG ECFIN	Memoranda of Understanding (MoU) for three EAPs; Directorate General Economic and Financial Affairs (DG ECFIN) implementation reviews underpinning the first two EAPs; European Stability Mechanism (ESM) compliance reports underpinning the third programme; Staff statements following the subsequent reviews; Selected DG ECFIN occasional papers; DG ECFIN economic forecasts; DG ECFIN quarterly reports on the Euro area; Other reflection papers and staff working documents; Greek Strategy for the Financial Sector (2012); Evaluation of Cypriot, Irish, Spanish and Portuguese Adjustment Programmes;	●●●
European Commission, DG FISMA	DG FISMA financial sector review (2017)	●

Source of documentation	Type of documentation	Usefulness
ECB	Financial stability reports (2009-2018); Aggregate report on the Greek comprehensive assessment (2015)	●●●
IMF	Country reports (2009-2018); Selected issue papers on Greece (2009) <i>Ex post</i> evaluation of exceptional access under the 2012 extended arrangement (2017)	●●
Bank of Greece	Report on the recapitalisation and restructuring of the Greek banking sector (2012); Stress test of the Greek banking sector (2013); Annual reports (2009-2011) Financial stability reviews (2009-2011); Monetary policy reviews (2008-2011). Working paper on moral hazard and strategic default (2016); The chronicles of the great crisis: 2008-2013 (2014).	●●●
Moody's communication	Sector comments and downgrades communication for Greek sovereign and main Greek banks (2009-2018)	●●
Other	European Court of Auditors (ECA): Evaluation of Commission's intervention (2017); ESM evaluation of the adjustment programmes (2017); Bain & Co: Report to the Bank of Greece (2013); BlackRock Solutions: Diagnostic assessment of Greek banks (2012); World Bank (WB): Study on bank resolution and bail-in (2017); HFSF: Report on large corporate NPL resolution project (2014); Sample of articles from economic and financial press e.g. Financial Times (FT) and the Economist; Selected academic literature and publications produced by selected think-tanks.	●●

In addition, the study team was granted access to limited non-publicly available documents, notably extracts from policy briefs prepared by DG ECFIN staff following subsequent reviews of the EAPs.

The study team compiled and reviewed key financial and macroeconomic data and indicators from international and national sources (e.g. IMF WEO April 2019, World Bank Open Data, EBA, ECB, BoG, ESTAT, stock market index in Athens, and the Greek Ministry of Finance). Table A1.3 below provides an overview.

Table A1.3 Key indicators and data sources

Component	Data Type	Description	Key data source(s)
<i>The real economy</i>	National accounts	Indicators of macroeconomic Performance, including: GDP and its components Consumer Price Index (CPI) unemployment/employment Balance of Payment (BoP) fiscal statistics	Eurostat, ELSTAT, Central Bank and major international sources (e.g. IMF WEO and World Bank data)
<i>Liquidity, stability, capitalisation, NPL resolution</i>	Monetary, banking and financial account statistics	Indicators such as: banks' capitalisation borrowing needs wholesale funding costs deposit volumes lending volumes banks' capital (CET 1 capital) NPL ratios (disaggregation for specific components) volume of NPLs sold on the secondary market (2017-2019) banks' exposure to GGBs	Ministry of Finance, BoG and major international sources e.g. Bank of International Settlement (BIS), ECB, EBA, IMF)
<i>Market confidence</i>	Market indexes	banks' stock market index in Athens (FTSE Greek Banks), uncertainty indices ²³⁴ (news-based) house price index	Stock market data, Ministry of Finance, Bank of Greece, HKKS, and major international sources (e.g. BIS, ECB, EBA, IMF)

A1.2.3 Interview programme

Overall, 20 in-depth interviews were conducted with the key informants and stakeholders. Interviews were conducted either face-to-face namely, scoping interviews with the EC officials based in Brussels and the interviews with the Greek stakeholders based in Athens during 3 days' mission that took place in March 2020, or over the phone with all other stakeholders. The interview transcripts were validated by the stakeholders prior to the final

analysis. In addition, written follow-up took place at the last stage of the project involving ten already interviewed stakeholders from the BoG, EC, ESM and private sector organisations. Those were requested to provide additional insights/ clarifications (via email) on selected outstanding issues.

Table A1.4 shows the number and type of stakeholders interviewed throughout the programme (see Annex 2 for detail). Where interviewees had moved from the institutions where they worked during the crisis to new roles (e.g. in private sector organisations), the responses reflect their original organisations, given the relevance of insights from that time.

Note that out of three interviewees invitations sent to the IMF staff²³⁵, two led to the actual interviews while in one case the Fund provided the written responses. Representatives from the ECB did not respond to the invitation to contribute to the study. This is rather unfortunate as the ECB was a key player in the Greek programmes and particularly, banking sector reforms and measures.

Table A1.4 Overview of interviews

Stakeholder Group	No of interviews
ESM	2
European Commission	3
IMF	2
Bank of Greece	3
HFSF	3
Ministry of Finance	1
Relevant national associations	3
Other	3
Total	20

The interviews were generally of high quality, with the interviewees proving well informed, well prepared and candid in expressing their perspectives.

In some instances, the stakeholders struggled to recall specific context or feature(s) of the programmes at the time. For that reason, on number of occasions, the study team followed up with additional questions (via an email or brief phone call) to clarify and/or expand on selected issues discussed.

Stakeholder consultation followed the principles set out in the *Better Regulation Guidelines*²³⁶.

²³⁵ Including one former IMF staff member

²³⁶ European Commission, 2016. Better Regulation Guidelines. Available at: http://ec.europa.eu/smart-regulation/guidelines/toc_guide_en.htm

A1.2.4 Delphi survey

The Delphi survey sought to establish views of selected experts on the causes and consequences of the banking sector crisis in Greece, as well as the effectiveness of the policy responses and reforms. Participants were asked for their views on the adequacy of diagnostics prior to the crisis, key factors behind the liquidity and solvency problems (including the PSI) faced by Greek banks, persistently high NPLs, aspects related to the HFSF, and corporate governance of the national banks. The structure of the questionnaire was largely driven by the insights gathered during key informant interviews, discussions with the Steering Group, review of the macroeconomic and financial data, and consultations with local economic experts.

Recruitment of the respondents was carried out with the support of local economic experts and finalised based on the review of the Steering Group. The eventual Delphi panel comprised 62 representatives from the following groups/institutions:

- Financial sector experts, e.g. research departments of commercial banks, the Greek stock exchange, private economic consultancies and leading credit rating agencies;
- Academic community, e.g. senior staff from the economics departments of leading Greek universities and selected researchers specialising in the Greek economy/financial sector from leading UK, German and French universities;
- Researchers from leading European think-tanks with an extensive track record of research into the Greek economy/financial sector;
- Financial press, e.g. journalists from established economic/financial press;
- Other, e.g. individual experts from national regulators with considerable and past experience of the financial sector in Greece.

The study team made substantial efforts to target those respondents who were likely to have an extensive prior knowledge of EAPs based on their experience with the country context and economic and financial situation. To avoid the risk of bias, officials with direct and material involvement in the implementation of the programmes - whether from the Greek authorities or international creditors - were excluded from the sample. During the first round (April 2020), 30 of the 62 potential respondents provided valid feedback, or a high 48 per cent response rate.

The first round of survey results yielded consistent views among respondents, with a high degree of consensus on most questions. The second round of the Delphi survey was thus deemed unnecessary.

Table A1.5 presents the respondents by background/type of organisation for both rounds.

Table A1.5 Details of the Delphi Panel that were invited and responded

Type of organisation	Number of invitees	Number of responses
Financial sector	32	18
Academia	18	8
Think-tanks	6	2
Financial press	4	0
Other	2	2
Grand total	62	30

Error! Reference source not found. provides a detailed overview of the results of the survey.

A1.3 Methodological limitations

Several limitations variously affected the depth, breadth and consequently the robustness and reliability of the analysis undertaken as part of this study. These limitations are listed in order of importance.

- **Limitation 1:** Methodological choices were significantly constrained by the budget available for this study. While methodological choices are typically driven primarily by the research objectives, the small budget considerably limited the scope of primary data collection activities and the amount of qualitative and quantitative analysis that could be undertaken. For example, stakeholder interviews were mostly limited to key informants. In an ideal scenario, the study team would have liked to interview the representatives of a cross-section of Greek banks, academics and think tanks, as well as larger pool of stakeholders from the European Commission. Similarly, the team would have liked to dive deeper into a number of topics including bank-level analysis related to the loan origination policies prior to the crisis, sequencing and specific elements of NPL reforms (e.g. whether creation of an AMC would have been an appropriate choice, impact of specific legislative measures on NPLs, reforms related to creation of a secondary market for NPLs etc.) and impact of corporate governance reforms on 'core banks', as well as the policy trade-offs related to capital controls, a more detailed examination of risks' diagnostics undertaken by three institutions and the plausibility of an earlier PSI. In addition, a cross-country comparative perspective would have been fleshed out to a greater extent. However, such detailed analysis was not feasible.
- **Limitation 2:** It was not possible to consult some core IMF staff initially shortlisted for the interviews given the exceptional work pressures stemming from the COVID-19 crisis. An additional issue was the absence of a specific protocol agreed between the European Commission and the IMF that would have guided the IMF staff engagement with the study, including confidentiality, timing of comments and reviews. While the IMF staff provided timely written inputs directing the team to publicly available material (most of which had already been reviewed by the study team), ECB officials did not participate in the study at all. The study thus lacks the wider input and tacit knowledge of these stakeholders.
- **Limitation 3:** Limited access to non-publicly available sources of information meant that the study relied heavily on public sources of information. Access to non-public information was limited, with some exceptions (e.g. extracts from policy briefs).
- **Limitation 4:** Some stakeholders had some difficulty in recalling certain details related to the EAPs or their context, given the passage of time since the start of first programme.

The limitations affected the depth of the analysis and as such, it was not possible for the study team to draw conclusions on certain aspects of the programme (e.g. sequencing of NPL reforms, appropriateness and effectiveness of specific NPL reforms etc.). The section on NPLs therefore presents findings based on secondary material and a limited number of interviews, rather than conclusions. Generally, however, these limitations do not undermine the overall (strong) robustness and reliability of the analysis, findings and conclusions from the whole study. Mitigation measures were undertaken by the study team, including extensive cross-verification of material interview insights with other primary/ secondary data, several rounds of critical internal reviews, and the in-depth reviews of the various drafts of the report by the European Commission and IMF staff prior to its finalisation.

Annex 2 List of completed interviews

No	Name	Role of interviewee	Date of the interview
Institutions			
<i>IMF (current and former)</i>			
1	Anonymized	Anonymised	29 th March, 2020
2	Anonymized	Anonymised	19 th February, 2020
<i>European Commission (current and former)</i>			
3	Anonymized	Anonymised	27 th January, 2020
4	Anonymized	Anonymised	4 th February, 2020
5	Anonymized	Anonymised	4 th February, 2020
<i>ESM</i>			
6	Anonymized	Anonymised	1 st April, 2020
7	Anonymized	Anonymised	24 th February, 2020
National Stakeholders			
<i>Bank of Greece (current and former)</i>			
8	Anonymized	Anonymised	19 th March, 2020
9	Anonymized	Anonymised	10 th March, 2020
10	Anonymized	Anonymised	10 th March, 2020
<i>HFSF (current and former)</i>			
11	Anonymized	Anonymised	11 th March, 2020
12	Anonymized	Anonymised	17 th March, 2020
13	Anonymized	Anonymised	11 th March, 2020

Study on "The financial sector in Greece during the economic adjustment programmes:
2010-2018"

<i>Ministry of Finance (current and former)</i>			
14	Anonymized	Anonymised	10 th March, 2020
<i>Public Debt Management Agency</i>			
15	Anonymized	Anonymised	14 th April, 2020
<i>Hellenic Federation of Enterprises</i>			
16	Anonymized	Anonymised	11 th March, 2020
<i>Hellenic Banking Association</i>			
17	Anonymized	Anonymised	12 th March, 2020
<i>Hellenic Association of Insurance Companies</i>			
18	Anonymized	Anonymised	12 th March, 2020
<i>Moody's Credit Rating Agency (current and former)</i>			
19	Anonymized	Anonymised	16 th April, 2020
<i>Academia (leading UK university)</i>			
20	Anonymized	Anonymised	8 th May, 2020

Annex 3 List of reviewed documentation

A3.1 List of reviewed documentation for Q1

1. Asimakopoulos, I., Avramidis, P.K., Malliaropoulos, D. and N.G. Travlos (2016) – "Moral hazard and strategic default: evidence from Greek corporate loans", Bank of Greece Working Paper No 211
2. Bain & Co (2013) – "Report to the Bank of Greece. Policies and procedures required to ensure effective management and recovery of assets left in liquidation following the resolution of Greek credit institutions: Assessment and recommendations"
3. Bank of Greece (2014a) – "The Chronicle of the Great Crisis: The Bank of Greece 2008-2013. Public Interventions and Institutional Actions to Safeguard Financial Stability and Overcome the Crisis"
4. Bank of Greece (2014b) – "2013 Stress Test of the Greek Banking Sector", March 2014
5. Bank of Greece (2012) – "Report on the Recapitalization and Restructuring of the Greek Banking Sector", December 2012
6. Bank of Greece (2011a) – "Annual Report 2010", April 2011
7. Bank of Greece (2011b) – "Monetary Policy 2010-2011", February 2011
8. Bank of Greece (2010a) – "Monetary Policy Interim Report 2010", October 2010
9. Bank of Greece (2010b) – "Financial Stability Review", July 2010
10. Bank of Greece (2010c) – "Annual Report 2009", April 2010
11. Bank of Greece (2010d) – "Monetary Policy 2009-2010", March 2010
12. Bank of Greece (2009a) – "Interim Financial Stability Review", December 2009
13. Bank of Greece (2009b) – "Monetary Policy Interim Report 2009", October 2009
14. Bank of Greece (2009c) – "Financial Stability Review", June 2009
15. Bank of Greece (2009d) – "Monetary Policy 2008-2009", February 2009
16. BlackRock Solutions (2014) – "Project Aura: Asset Quality Review and Credit Loss Projection Methodology", March 2014
17. BlackRock Solutions (2012) – "Diagnostic Assessment of Greek Banks. Excerpt from Report Submitted on December 30, 2011"
18. ESM (2020) – Restoring growth and financial stability: how Greek banks responded. Available at: <https://www.esm.europa.eu/publications/restoring-growth-and-financial-stability-how-greek-banks-contributed>
19. European Commission (2017) – "Coping with the International Financial Crisis at the National level in a European Context. Impact and Financial sector Policy Responses in 2008-2015"
20. European Banking Authority (2011) – "2011 EU-Wide Stress: Test Objectives, outcome and recommendations"
21. European Central Bank (2015) – "Aggregate Report on the Greek Comprehensive Assessment 2015"
22. European Central Bank (2010) – "Financial Stability Review", June 2010
23. European Central Bank (2009a) – "Financial Stability Review", December 2009

24. European Central Bank (2009b) – “Financial Stability Review”, June 2009
25. International Monetary Fund (2010a), “Greece: First Review Under the Stand-By Arrangement”, Country Report No. 10/286, September 2010
26. International Monetary Fund (2010b), “Greece: Stand-By Arrangement—Review Under the Emergency Financing Mechanism”, Country Report No. 10/217, July 2010
27. International Monetary Fund (2010c), “Greece: Staff Report on Request for Stand-By Arrangement”, Country Report No. 10/110, May 2010
28. International Monetary Fund (2010d), “Greece: Second Review Under the Stand-By Arrangement—Staff Report; Press Release on the Executive Board Discussion; and Statement by the Executive Director for Greece”, Country Report No. 10/372, December 2010
29. International Monetary Fund (2009a), Selected Issues Papers on Greece, August 2009
30. International Monetary Fund (2009b), Article IV Consultation Staff Report for Greece, August 2010

A3.2 List of reviewed documentation for Q2-Q5

1. Allen, P, (2012) – “Huge Sense of Doom Among ‘Grexit’ Predictions”, CNBC
2. Allen & Overy LLP (2012) – “How the Greek Debt Reorganisation of 2012 Changed the Rules of Sovereign Insolvency”, September 2012
3. Alpha Bank, 2010/11/12/15. Annual Financial Reports.
4. Bank of Greece (2018) – “Overview of the Greek Financial System. Special Feature”, November 2018
5. Bank of Greece (2014) – “The Chronicles of the Great Crisis. Bank of Greece: 2008-2013”, Center for Culture Research and Documentation, September 2014
6. Bank of Greece (2013) – “Annual Report 2012”, February 2013
7. Bank of Greece (2012) – “Report on the Recapitalisation and Restructuring of the Greek Banking Sector”, December 2012
8. Bank of Greece (2010) – “Annual Report for the Year 2009”, April 2010
9. Bank of International Settlements (2018) – “Lessons from the Financial Crisis and Challenges for the Greek Banking Sector”, Speech by Mr Yannis Stournaras, Governor of the Bank of Greece, at a lecture organized by the International Center for Monetary and Banking Studies (ICMB), Geneva, 13 November 2018
10. Barber, T. (2009) – “Greece Vows Action to Cut Budget Deficit”. Financial Times, October 2009
11. Battisini, N., Pagano, M. and S. Simonelli (2014) – “Systemic risk, sovereign yields and bank exposures in the euro area”, Economic Policy 29(78)
12. Centre for European Policy Studies (2011) – “An Evaluation of the French Proposal for a Restructuring of Greek Debt”, July 2011
13. Centre for International Governance Innovation (2016) – “How the SYRIZA led government privatised Greek banks”, Article by Miranda Xafa, January 2016
14. Christodoulakis, G. (2015) – “Managing Risks in the European Periphery Debt Crisis: Lessons from the Trade-off between Economics, Politics and the Financial Markets”, Palgrave, Macmillan

15. Committee for the Abolition of Illegitimate Debt (2017) – "Greece: PSI and process of bank recapitalisation (2012-2016)", January 2017
16. Committee for the Abolition of Illegitimate Debt (2017) – "Greece: PSI and process of bank recapitalisation (2012-2016)", January 2017
17. Coppola, F. (2015) – "The Way to Fix Greece is to Fix the Banks", Financial Times, 27 July 2015
18. Council of the European Union (2011) – "Statement by the Heads of State or Government of the Euro area and EU Institutions", 21 July 2011.
19. DG ECFIN (2019). Enhanced Surveillance Report, Greece, Institutional Paper No 099, February 2019
20. DG ECFIN (2018a). Enhanced Surveillance Report, Greece, Institutional Paper No 090, November 2018
21. DG ECFIN (2018b). Compliance report - the third Economic Adjustment Programme for Greece - Fourth Review, July 2018
22. DG ECFIN (2017) – "Compliance Report. The Third Economic Adjustment Programme for Greece, Second Review", June 2017
23. DG ECFIN (2016) – "Compliance Report. The Third Economic Adjustment Programme for Greece. First Review", June 2016
24. DG ECFIN (2014) – "The Second Economic Adjustment Programme for Greece. Fourth review", Occasional Papers 192, April 2014
25. DG ECFIN (2013) – "The Second Economic Adjustment Programme for Greece. Second review", Occasional Papers 148, May 2013
26. DG ECFIN (2012) – "The Second Economic Adjustment Programme for Greece", Occasional Papers 94, March 2012
27. DG ECFIN (2011a) – "The Economic Adjustment Programme for Greece. Fourth review", Occasional Papers 82, July 2011
28. DG ECFIN (2011b) – "The Economic Adjustment Programme for Greece. Fifth review", Occasional Papers 87, October 2011
29. DG ECFIN (2010) – "The Economic Adjustment Programme for Greece", Occasional Papers 61, May 2010
30. Economist Intelligence Unit (2015) – "Bank Recapitalisation Gets Under Way", 25 November 2015
31. Eurobank, 2010/11/12/15. Annual Financial Report.
32. Euromoney (2015) – "Greek banks go for third lucky", Article by Dominic O'Neil, November 2015
33. European Bank Authority (2018) – "EU-Wide Stress-Tests Results", November 2018
34. European Central Bank (2010) – "Monthly Bulletin-June", July 2010
35. European Commission (2019) – "Ex-Post Evaluation of the Economic Adjustment Program: Cyprus 2013-2016", October 2019
36. European Commission (2017) – "Coping with the International Financial Crisis at the National Level in a European Context. Impact and Financial Sector Policy Responses in 2008-2015", Commission Staff Working Document, SWD (2017) 373 final, November 2017

37. European Commission (2015) – "Memorandum of Understanding Between the European Commission, Acting on Behalf of the European Stability Mechanism, and the Hellenic Republic, and the Bank of Greece", August 2015
38. European Court of Auditors (2017) – "The Commission's Intervention in the Greek Financial Crisis", Special Report No 17/2017, November 2017
39. European Stability Mechanism (2017) – "Evaluation of EFSF/ESM Programmes", June 2017
40. Financial Times (2014) – "Greece in Banking Stand-off with Bail-out Leaders", 24 February 2014
41. Financial Times (2012) – "PSI Loss", 13 September, 2012
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Annex 4 Summary of desk review on diagnostic work conducted by the BoG, EC, ECB and the IMF

Summary of reports concerning developments in the financial sector in Greece over the period 2009 – 2010

European Commission publications

The study team reviewed the following publicly available European Commission Reports covering the period prior to and the early stages of the Greek crisis:

- Quarterly Report on the Euro-area (QREA) for the period March 2009-June 2010;
- Economic Economic Forecasts (EEF) for the period Spring 2009 to Autumn 2010.

The QREAs provide an aggregate analysis of economic developments in the Euro-area during a given quarter, without going too much into country specific details. As such, developments in the Greek banking/financial sector were not specifically discussed in the above QREAs; although, issues affecting the Greek banking sector were briefly mentioned in the context of the broader euro-area analysis. For example, the March 2009 QREA makes a reference to loose credit policies fuelling the rapid rise in property prices observed in Spain, Portugal and Greece in the context of a discussion on the build-up of current account imbalances within the euro-area. Similarly, the June 2009 QREA highlights the notable decline in lending in Greece between Oct 2008 - April 2009 when describing the banking sector developments in the euro-area following substantial banking support measures implemented by several Member States. In the context of this discussion, the Report highlights banking sector vulnerabilities at euro-area level, including the risk of negative feedback loop from the real economy to the banking sector (the functioning of interbank markets having not fully returned to normal levels, continuing fragility of bank balance sheets and uncertainty about the capacity of many banks to absorb losses linked to assets that may become impaired as the effects of the economic down-cycle feed through). The December 2009 QREA included a special, more detailed section euro- area banking sector developments, but it also did not dwell on country specific issues. The QREAs produced in 2010 do not make a specific mention of Greek banking sector issues even in the context of the broader euro-area analysis.

The Autumn 2009 EEF notes that the direct impact of the financial crisis on the Greek banking sector had been relatively contained, due to its limited exposure to high risk financial investments. The Report also suggests that the Commission was underestimating the situation in Greece. There was some expectation at the time that a gradual improvement in liquidity and capitalisation of Greek banks might contribute to a modest credit expansion in 2010, which of course did not prove to be the case.

The Spring 2010 forecast makes a reference to large increase in lending to households prior to the crisis as a source of vulnerability in Greece and some other euro-area countries. Banking sector liquidity issues are specifically highlighted and discussed as a risk factor for Greece (the downside risk to economic activity via bank-lending channel).

The Autumn 2010 forecast discusses the deceleration in credit expansion as a result of tight credit conditions and high household indebtedness, but provides a rather optimistic outlook for future anticipating that an improvement in liquidity and capitalisation of Greek banks could potentially help sustain a modest expansion in credit expansion which in turn could private consumption and foster investment.

Bank of Greece publications

Most of the Bank of Greece reports (henceforth BoG) prior to and during the initial period²³⁷ of the first Economic Adjustment Program (henceforth EAP) were published in the context of its regular publications' series. These comprise the *Annual Report* (Governor's report), the *Monetary Policy Interim Report* and the *Monetary Policy Report*. In the aftermath of the 2008 - 2009 global financial crisis, the BoG issued in 2009 a new publication series, the *Financial Stability Review*. It was published twice a year, in June (main report) and in December (Interim Report). Yet, it was discontinued after the 2010 main report and the next report was published only in December 2019.

In the regular BoG reports concerning the period under review, the analysis focused especially on the increasing ratio of non-performing loans (NPLs), which was considered a significant factor for banks' increasing credit risk (see e.g. BoG 2009d, 2010d). Indicatively, the NPLs ratio to total loans increased from 5% in December 2008 to 7.2% in September 2009 (BoG 2010d). It rose further, to 10% in September 2010, from 7.7% in December 2009 (BoG 2011a). The observed deterioration in loan servicing was mainly attributed to the rapidly worsening financial situation of the Greek economy. Strong concerns about the increasing rate of NPLs were expressed in BoG (2011a) and BoG (2011b). In BoG (2011b), it was explicitly stated for the first time that their ratio is expected to continue increasing in the next years. **However, these two reports do not include a detailed presentation of NPLs portfolios (e.g. with respect to categories of borrowers, borrowing purpose), nor proceed to any technical analysis of the associated credit risk.**

The deteriorating banking system liquidity is also considered in some of the BoG regular reports. This adverse development was analyzed in some reports published relatively by the end of period 2009 - 2010 (e.g. BoG 2010a, 2011a, 2011b). But earlier, in BoG (2009b) this factor is relatively downplayed, as the measures taken by the Greek government in December 2008 to support liquidity after the global financial crisis and improved conditions at that time in the global financial markets had eased liquidity pressures. However, in later reports it was referred that liquidity constraints heightened. The primary cause for this development was considered to be the deteriorating fiscal situation and the associated country risk (BoG 2010a, 2011a, 2011b). These developments are depicted at the successive downgrading of the Greek sovereign credit rating, which in turn negatively affected Greek banks' credit ratings (BoG 2011a, 2011b), thereby a sovereign crisis-banking sector developments feedback loop was evident. As the Greek banks' credit ratings worsened, the value of their collaterals to the Eurosystem also declined, which was another compounding factor to their liquidity constraint (BoG 2011a). Hence, Greek banks got increasingly reliant on the Eurosystem and 2008 Greek government measures for liquidity (BoG 2011a, BoG 2011b). That said, it is acknowledged in these two reports that this can only be a temporary solution to the tightening credit conditions.

Regarding other risks potentially affecting the financial sector during 2009-2010, no references were found in any of the regular BoG reports including indications of loose credit supply prior to the crisis and issues related to the corporate governance of Greek banks.

Regarding the contents of the BoG Financial Stability Review (henceforth FSR) reports during 2009 - 2010, which focused on the trends of factors affecting the robustness of the banking system, the first two reports (BoG 2009a, 2009c) do not include an explicit warning about a sovereign debt servicing conditions - banking sector developments feedback loop. However, BoG (2010b) emphasized the fact that international money and capital markets became inaccessible from end-December 2009 due to increasing

²³⁷ Cut off line we used was April 2011, as then Bank of Greece (2011a) was published, which was the first BoG report with data about key vulnerability and shock-absorption capacity indicators for the banking system fully covering 2010.

concerns about Greece fiscal prospects, a practical evidence that a sovereign crisis – banking sector developments nexus was a material issue. As a result, Greek banks relied exclusively on the Eurosystem for the necessary liquidity. In addition, all BoG FSR reports refer to the negative effects of adverse macroeconomic and financial conditions of the Greek economy and on the worsening financial condition of firms and households. Despite these developments, the key aggregates of the Greek banks remained fundamentally sound and were not considered to pose risks to financial stability. Finally, in all reports it was expected that domestic economic activity will decline.

With respect to NPLs, in all BoG FSR reports an increase in the ratio of NPLs to total loans is recorded, starting from 4.5% in 2007 and reaching 8.2% in March 2010. This upward trend is observed in all loan categories. As a result, accumulated bad loan provisions reached EUR 9.0 billion in 2009 from EUR 6.6 billion in 2008. Despite higher provisions, the ratio of accumulated provisions to NPLs declined from 53.4% in 2007 to 41.5% to 2009 and the BoG stresses that banks should increase bad loan provisioning. In order to address increasing NPLs, BoG (2009a, 2010b) reports that several banks proceeded to more private debt restructuring, with the respective amount increasing from EUR 0.9 billion in 2008 to EUR 3.4 billion in end-2009.

As far as trends in credit supply are concerned, BoG (2009c, 2010b) reports a significant decline in credit supply to firms (from 23.6% in 4Q/2008 to 2.9% in 05/2010) and households (from 12.8% in 12/2008 to 2.0% in 05/2010) due to tightened credit criteria applied by banks, reluctance of firms and households to take on new investments and worsening of households' and firms' expectations for their financial position.

With respect to issues around the governance of banks, BoG (2009c, 2010b) stressed that banks should: (i) pursue prudent profit distribution and bonus policies, (ii) diversify their funding sources and reduce their reliance on the Eurosystem, (iii) strengthen the role of risk management units and upgrade their risk measurement and monitoring systems, (iv) consider initiatives in the direction of strategic alliances and/or mergers which will help them to better manage the deleveraging process, (v) maintain capital buffers well above the minimum in order to deal with the consequences of the economic downturn in Greece and in the countries where they have presence.

With respect to the existence of other risks for the financial sector, all FSR reports put emphasis on: (i) the pessimistic prospects for household income and wealth, (ii) the decline in house price index (from +12.2% in 2006 to -5.3% in 3Q/2009), although BoG (2010b) considered that a risk of an abrupt correction seemed limited, (iii) the risk from the activity of Greek banks in Emerging Europe countries, (iv) the successive downgrades of the credit rating of the Greek government which triggered downgrades of Greek banks and (v) the outflows of deposits, in particular in the first months of 2010.

Conclusion

In the BoG regular reports published since early during the period of interest 2009 – 2010, emphasis is given to the escalating ratio of non-performing loans (NPLs), which was considered a significant factor for banks' increasing credit risk. The deteriorating banking system liquidity, as well as its causes and implications were considered in some of the BoG regular reports published relatively by the end of period 2009 – 2010.

Among the causes of the deteriorating liquidity in 2010 feature the deteriorating fiscal situation and associated country risk, which negatively affected Greek banks' credit ratings. Thus, a sovereign crisis-banking sector nexus was detected in regular late-2010 BoG reports, but not earlier.

No references to other risks potentially affecting the financial sector during 2009-2010, such as loose credit supply and issues related to the corporate governance, were found in any of the regular BoG reports.

BoG FSR reports referred to many of the risks that might affect the Greek banking system. However, there was no classification of risks based on their significance or

projections of their prospect evolution, e.g. in the short-term, medium-term horizon. Generally, the FSR BoG reports that were provided during the period 2009 – 2010 offered a much more comprehensive analysis of the risks for the Greek banking system than the regular BoG reports.

Finally, it is noted that subsequent BoG reports already reviewed, such as the report on the recapitalization and restructuring of the Greek banking sector (BoG 2012) and the report on the 2013 stress test of the Greek banking sector (BoG 2014) do not refer to vulnerabilities/risks in the Greek banking system prior to the first EAP. The same holds for the Bain&Co report to the BoG (Bain&Co 2013), as well as for the BlackRock Solutions reports assessing the quality of loan portfolios of Greek banks (BlackRock Solutions 2011, 2014).

ECB publications

In the context of ECB's Financial Stability Reviews prior and at the early stages of the first EAP, it is noteworthy that neither of the two semi-annual reports during 2009 (ECB 2009a, 2009b) made any specific references to Greece specific financial sector risks. ECB (2009b) included a reference to the increased correlation between banks CDS and sovereign CDS, while attributing it to State support schemes towards the banking sector. Among other Euro Area wide risks, the report highlights the negative feedback loop between the financial sector and the weakening real sector, volatile real estate prices and rising corporate sector credit risk. **ECB (2010) referred in turn to Greece-specific risks, mainly by describing the onset of the Greek sovereign crisis, noting inter alia that "the main trigger for the market's reappraisal of sovereign risk appeared to be the fiscal woes of Greece and uncertainty surrounding the prospect of agreeing a credible fiscal consolidation plan".**

EBA publications

Explicit references to the EU (including Greek) banks' exposure to sovereign risk were included in the publication of the EU wide stress test in July 2011 (EBA, 2011). In particular, the report noted that as of end-2010, around EUR 98 billion of GGBs and EUR of 17 billion of Greek interbank lending was held by EU banks, of which 67% and 69% respectively by Greek banks. Aside from the negative impact for banks from their direct exposure to sovereign securities, the report makes reference to potential second-order effects, stemming from the negative market sentiment on stressed sovereigns, affecting banks through various channels such as: (i) market funding costs and availability, (ii) share price and capital generation capacity, and (ii) business and counterparty profile. But as the report was published in July 2011, these analyses cannot be considered as an "early warning" of the sovereign crisis – banking sector nexus.

IMF publications

The IMF's country reports for Greece during 2009-2010 (IMF, 2009a; IMF, 2009b; IMF, 2010a; IMF, 2010b; IMF, 2010c; IMF, 2010d) described the financial sector's liquidity problems and solvency risks, stemming from the global financial crisis as well as the onset of the sovereign crisis, noted the risks of higher NPLs, cross-border exposures, and confidence erosion.

Overall, during 2009-2010, the IMF highlighted a set of risks in relation to the financial sector arguing for respective policy and regulatory interventions in the following areas:

Liquidity risk; the reports refer to the reasons of tight liquidity conditions of Greek banks and stress that they require continued vigilance (IMF, 2010b). The most important of them is the loss of market access as a result of market concerns about the sovereign debt (IMF, 2010c) and the resulted downgrade (IMF, 2010b). Other reasons include the high-cost of renewing of maturing interbank liabilities (IMF, 2010c), the – moderate at that point of time – deposit outflows (IMF, 2010c; IMF, 2010a; IMF, 2010d)

and the fall in prices of pledged collateral (IMF, 2010c). As a result, the Greek banks were overly depended on the short-term ECB financing (IMF, 2010c; IMF, 2010d). The reports refer to the actions taken in order to address the issue of tight liquidity conditions. These actions include the announcement by the ECB on May 2010 that market debt instruments issued or guaranteed by the Greek government will remain eligible as collateral, independent of rating agencies grading (IMF, 2010c), the release in late November of the previously-approved €25 billion of government guarantees for bank bonds (IMF, 2010d), the establishment of the Hellenic Financial Stability Fund (IMF, 2010c) and the support by the ECB's SMP Program (IMF, 2010a). The staff of IMF believes that banks will have sufficient liquidity for some months on the assumptions that SMP program remains in place and that the €25 billion will significantly increase repo-eligible collateral. Staff also considers that purchases of government bonds by the ECB is an important channel that will ease banks' liquidity (IMF, 2010e).

Despite the above, there is no comprehensive analysis or detailed diagnostics of the sovereign banking sector nexus. Instead, it highlighted the risks due to a macro-feedback loop similarly to what regulators did for many other European countries with smaller vulnerabilities than Greece. Specifically, IMF (2010c) warned that *"the dual challenge of achieving an internal devaluation and strong fiscal adjustment, amid a very difficult funding environment, is bound to weigh heavily on growth for a prolonged period. To avoid feedback loops, the soundness of the banking system needs to be safeguarded with proactive actions to stem potential liquidity pressures and preserve adequate capitalization."*

- **Solvency risk;** while banks exhibited comfortably high capital adequacy metrics, and the financial system was perceived as resilient to the global slowdown, the Fund recommended the authorities to closely monitor banks, be prepared to act if needed (IMF, 2009b), while it expected a significant impact on profitability and banks' balance sheets - hence the need to expand the tools for dealing with solvency pressures by establishing a Financial Stability Fund (IMD, 2010c). In this respect, the reports refer that additional safety would be provided with the creation of the Hellenic Financial Stability Fund (IMF, 2010c), mention the milestones of its creation (IMF, 2010b; IMF, 2010a; IMF, 2010d) and present its function and structure (IMF, 2010c; IMF, 2010b). Also, they report the need to increase the resources dedicated to banking supervision (IMF, 2010c), the recruiting procedure for this reason (IMF 2010a). Furthermore, the reports briefly present banks' financial results (IMF, 2010d) and stress the decision of the Greek authorities to perform a due diligence analysis for the banks in which the state has a significant state (IMF, 2010a).
- **Credit risk;** the risk of a rise in Non-Performing Loans (NPLs) was highlighted prior to the sovereign debt crisis (IMF, 2009b). The Fund noted inter alia, that *"NPLs have been persistently high even during the upswing, while exposures to cyclically sensitive sectors—shipping, tourism, and construction—are large for some banks. Credit quality could therefore worsen in the downturn."* The NPLs risk was also mentioned in each of the subsequent reports published in 2010 (most of them report the NPL ratio), without nonetheless elevating it to the top priority issues, because banks' capital adequacy ratio remains well above the regulatory minimum (IMF, 2010b)
- **Cross border risk;** IMF (2009b) warned about risks from foreign subsidiaries, noting that *"credit expansion abroad more should be in line with local deposit growth and funding"*, since total exposure in Emerging Europe ²³⁸in 2008 that stood at €53 billion (203 percent of equity) was assessed as large. Also, the IMF reports that a number of MoUs have been signed with host supervisory

²³⁸ Emerging Europe includes Albania, Bulgaria, Croatia, North Macedonia, Romania, Serbia, Turkey, Poland and Ukraine

authorities, in order to clarify and strengthen supervisory arrangements in countries where Greek banks have a significant presence, especially in Southern Eastern Europe (IMF, 2010c)

- **Confidence erosion;** IMF (2010a) made reference to observed deposits outflows, as a preliminary sign of weakening confidence vis-à-vis the financial system, albeit still under the control by the banks. Furthermore, the Fund mentions that the slippage of confidence in the sovereign was spilled over into the banking system (IMF, 2010c)
- **Market risk;** IMF (2009b) notes that "although trading books are relatively small, high volatility on equity, bond, and foreign exchange markets could generate losses."
- **Governance issues;** Only IMF (2010a) refers to the need for reforms within state-controlled banks. Also, as mentioned above, the IMF reports stress the need to increase the resources dedicated to banking supervision (IMF 2010c) and the decision of the Greek authorities to perform a due diligence analysis for the banks in which the state has a significant state (IMF, 2010a)
- **Data access;** IMF (2010b) made particular reference to difficulties in relation to accessing data which could be relevant to the PSI, by noting that "Private-sector exposure to Greece is difficult to gauge because of confidentiality provisions, which is complicating engagement of PSI. Foreign regulators are prevented from sharing available data on bank exposures to Greece with the ECB and the Fund because of confidentiality restrictions. Preliminary statistics (from the BIS and other sources) indicate that Greek banks' liability to non-resident financial institutions have remained broadly stable, but no precise data are available."

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