COPING WITH THE INTERNATIONAL FINANCIAL CRISIS AT THE NATIONAL LEVEL IN A EUROPEAN CONTEXT

Impact and financial sector policy responses in 2008-2015

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European Commission

Directorate-General for Financial Stability, Financial Services and Capital Markets Union

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This document has been prepared by the Directorate-General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA).

ABBREVIATIONS

Countries and regions

EU: European Union
EA: Euro area
CEE: Central and Eastern Europe
MS: Member State

BE: Belgium
BG: Bulgaria
CZ: Czech Republic
DK: Denmark
DE: Germany
EE: Estonia
IE: Ireland
EL: Greece
ES: Spain
FR: France
HR: Croatia
IT: Italy
CY: Cyprus
LV: Latvia
LT: Lithuania
LU: Luxembourg
HU: Hungary
MT: Malta
NL: The Netherlands
AT: Austria
PL: Poland
PT: Portugal
RO: Romania
SI: Slovenia
SK: Slovakia
FI: Finland
SE Sweden
UK: United Kingdom
JP: Japan
US: United States of America

Institutions

EBA: European Banking Authority
EBRD: European Bank for Reconstruction and Development
EC: European Commission
ECB: European Central Bank
Fed: Federal Reserve, US
IMF: International Monetary Fund
OECD: Organisation for Economic Cooperation and Development

Graphs/Tables/Units

bn:	Billion
bp. /bps:	Basis point / points
lhs:	Left hand scale
mn:	Million
pp. / pps.:	Percentage point / points
pt. / pts.:	Point / points
Q:	Quarter
q-o-q%:	Quarter-on-quarter percentage change
rhs:	Right hand scale
tn:	Trillion
y-o-y%:	Year-on-year percentage change

Currencies

EUR:	Euro
ECU:	European currency unit
FX:	Foreign Currency

BGN:	Bulgarian lev
CNY:	Chinese yuan, renminbi
CZK:	Czech koruna
DKK:	Danish krone
GBP:	Pound sterling
HUF:	Hungarian forint
HRK:	Croatian kuna
ISK:	Icelandic krona
MKD:	Macedonian denar
NOK:	Norwegian krone
PLN:	Polish zloty
RON:	New Romanian leu
RSD:	Serbian dinar
SEK:	Swedish krona
CHF:	Swiss franc
JPY:	Japanese yen
RMB:	Renmimbi
TRY:	Turkish lira
USD:	US dollar

Other abbreviations

AGS:	Annual Growth Survey
AMC:	Asset management company
AMR:	Alert Mechanism Report
APS:	Asset protection scheme
AQR:	Asset quality review

BAMC: Bank Asset Management Company (the Slovenian "bad bank")

BoP: Balance of payments
BSSF: Bank Solvency Support Facility (Portugal)
CDS: Credit default swap
CGD: Caixa Geral de Depósitos (the largest bank in Portugal)
CET1: Common equity tier 1 capital
CLP: Credit loss projection
CMU: Capital Markets Union
CoCos: Contingent convertibles
CRD: Capital Requirements Directive
CRR: Capital Requirements Regulation
CSR(s): Country-specific recommendation(s)
CT1: Core tier 1 capital
DTA: Deferred tax asset
DUTB: Družba za Upravljanje Terjatev Bank, or Bank Asset Management Company (BAMC) in English (the Slovenian "bad bank")
EAD: Exposure at default
EL: Expected Loss
IAS: International accounting standards
IDR: In-depth review
IFRS: International financial reporting standards
INSOL International: International Association of Restructuring, Insolvency and Bankruptcy Professionals
KfW: Kreditanstalt für Wiederaufbau (the German development bank)
LGD: Loss given default
MIP: Macroeconomic imbalance procedure
MOU: Memorandum of Understanding
NAMA: National Asset Management Agency (the Irish "bad bank")
NFC: Non-financial corporation
NKBM: Nova Kreditna Banka Maribor (the second largest bank in Slovenia).
NLB: Nova Ljubljanska Banka (the largest bank in Slovenia).
NPE: Non-performing exposure
NPL: Non-performing loan
NPV: Net present value
NRP: National reform programme
PCAR: Prudential Capital Assessment Review (Ireland)
PD: Probability of default
RBS: Royal Bank of Scotland
RPI: Royal Park Investments (a Belgian "bad bank")
RWA: Risk-weighted assets
SAREB: Sociedad de Gestión de Activos Procedentes de la Reestructuración Bancaria, or the Management Company for Assets Arising from the Banking Sector Reorganisation in English (the Spanish "bad bank")
SCP: Stability and convergence programme
SIFI: Systemically important financial institution
SME: Small and medium-sized enterprise
SSM: Single Supervisory Mechanism
UKAR: United Kingdom Asset Resolution (the English "bad bank").

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EXECUTIVE SUMMARY

The global financial crisis which broke out in 2008 revealed a number of deficiencies in the EU's surveillance mechanism, policy tools and regulatory environment. In response to the crisis, the EU undertook numerous initiatives designed to address these deficiencies. These include the creation of the Single Supervisory Mechanism and Single Resolution Board, strengthened regulation of financial institutions and financial markets, the strengthening of the Stability and Growth Pact, the establishment of a permanent fiscal backstop in the form of the European Stability Mechanism and a State aid framework that ensures financial stability while at the same time minimising the cost of financial rescues for the taxpayer. Work on the European deposit insurance scheme is on-going in order to complete the Banking Union. These policy initiatives are not the focus of the report, which rather describes and analyses the actions taken at the country level. The period covered in terms of policy actions is from 2008 until 2015, but with financial sector developments in 2016 also covered if useful for the assessment.

An important feature of the EU's overhaul of the economic and financial governance framework is that greater attention is paid to country monitoring. It has been recognised that early detection of a build-up of imbalances in a Member State is important, as is pre-emptive action to avoid, or help contain, a crisis. Monitoring imbalances and sound crisis management are essential to limiting spill-overs across countries in order to preserve cohesion within the EU and the optimal functioning of the euro area. In response to these concerns, the role of country surveillance has been stepped up in the European Semester and in the macroeconomic imbalances procedure, with the aim of helping to deliver stability-oriented growth. Furthermore, financial assistance programmes have been designed to help particular Member States overcome the loss of financial market access because of a confidence shock to the banking sector or to public finances.

Even before the financial crisis an extensive framework of country monitoring was in place with the excessive deficit procedure, stability and convergence programmes, the broad economic policy guidelines and the Lisbon Agenda of 2000. The focus was on budgetary, structural and more long-term growth issues. Arguably, the financial sector and financial stability received little attention compared to these other issues, but this, of course, changed once the crisis erupted.

In retrospect, economic and financial conditions differed greatly among Member States at the onset of the crisis, with some indicators sending warning signals to which not enough attention had been paid. Rapid credit growth and rising house prices, an increasingly leveraged banking sector, insufficient equity buffers, and poorly defined non-performing loans are just some of the variables which are now considered to be much more important to monitor. Today financial sector monitoring takes place in a much improved governance framework, mainly through the European Semester, and, in exceptional crisis circumstances, through an economic adjustment programme. In the former, the policy advice is formulated by means of country-specific recommendations. In the latter, a Memorandum of Understanding is agreed with the Member State concerned, which sets out the conditions under which the financial assistance is disbursed.

Policy advice is developed together with the Member States, and worked out in an extensive bilateral consultation process which is eventually endorsed at EU level by the Council of EU (Finance) ministers and the European Council (of EU Heads of State and Government). This framework is designed to foster ownership by the Member State concerned, while the multilateral setting encourages the exchange of best practices and allows for peer pressure to be exerted. Ownership of policy reforms by the particular Member State in turn increases commitment to the targets to be achieved and facilitates implementation. Experience in the recent financial crisis also demonstrates that better results can be obtained if the authorities and the social partners are fully on board.

The structure of the financial sector, the problems encountered and other factors like the state of public finances or the position in the business cycle can vary considerably among Member States. The EU country surveillance framework therefore needs to display a certain degree of flexibility, with policy guidance that is tailored to specific country challenges, while ensuring that there is a consistent and coherent approach across countries. This was sometimes questioned in sensitive situations like

resolution, bail-in, the reintroduction of capital controls or the sale of assets. Occasionally, the issue led to court cases against the Commission or the EU, but the legal challenges were eventually rejected, both on substantive grounds and due to the fact that the Member State concerned was the ultimate decision-taker.

Thanks to the measures taken both at country and EU level, great progress was made in the stabilisation of the economy. Still, the situation remains uneven among Member States, with those displaying ownership and rigorously implementing agreed policies generally performing better. Both the banking sector and the government sector, which are intricately linked, were stabilised, as was the private sector, but challenges remain. Strong growth has not returned, raising the question of a possible trade-off between stabilisation and growth.

In relation to the financial sector, bank share prices are rising, both lending and deposits interest rates are declining, and credit ratings are improving. The return of confidence in the financial sector has gone hand in hand with a significant reduction in reliance on central bank borrowing, and a strengthening of capital buffers. Still, there remains room for improvement, notably in terms of addressing remaining vulnerabilities, such as the high level of non-performing loans. In addition, banks' profitability prospects are seriously challenged by the environment of low interest rates and growth as well as the weight of legacy assets in particular non-performing loans.

More generally, government default and a break-up of the euro area were avoided, and financing conditions for sovereigns have normalised since the crisis. But yield spreads have not narrowed to the levels seen when the single currency was launched, perhaps indicating that markets did not sufficiently differentiate between sovereigns on the basis of credit risk at the time. The sovereign-bank nexus increased as a result of the crisis, as banks generally hold a large share of government debt, while in many Member States the government has become a significant bank shareholder as a result of bank rescue operations. Nevertheless, spill-overs between the government sector and the banking sector have been mitigated through the availability of ample liquidity as a corollary of the ECB programme of quantitative easing designed to realise price stability.

Normalising credit flows to the economy remains difficult, due to over-indebted households and firms contributing to increased business risks, together with weak aggregate demand and the need for balance sheet repair by many banks. Furthermore, lending remains fragmented along national borders. In the euro area, overall credit stopped contracting in early 2015, but with an annual growth rate of only about 2% at the end of 2016, lending remains subdued. As the traditional bank lending channel is not functioning well, the EU's drive for Capital Markets Union aims to spur direct market financing. This initiative will help to lift the annual growth rate of the financing of the corporate economy from 2% in 2015. For reference, 6% was achieved in 2007, when loans expanded at 8% and contributed 60% to the overall financing of the economy. Although it appears difficult to replace bank lending, especially for small and medium-sized enterprises, an increased role for capital market financing should help to achieve a better balance between the growth of the financial sector and of the real economy.

Finally, while stabilisation measures and accompanying financial regulations may weigh on growth in the short term, their impact is contained and temporary. Financial sector stability is key to ensuring long-term, sustainable growth, and avoiding damaging cyclical volatility. Furthermore, the cost of banking stabilisation in terms of deleveraging and growth is mitigated if supported by a smaller and healthier banking sector and accompanied by consolidation of public finances. The resumption of growth is further fostered by a return of confidence, for which a healthy banking system is essential. In the longer term, this can also compensate for any temporary contractionary effects as a result of banks adjusting to new financial regulations and undergoing balance-sheet repair.

Part I

National financial sectors in a European context

1. INTRODUCTION AND OVERVIEW

The report focuses on countries with an economic adjustment programme and with financial country-specific recommendations. The eight programme countries are Hungary, Latvia, Romania, Greece, Ireland, Portugal, Spain, and Cyprus. Twelve Member States at least once received a country-specific recommendation for their financial sector, namely Belgium, Bulgaria, Denmark, Germany, Croatia, Italy, Malta, the Netherlands, Austria, Slovenia, Sweden and the United Kingdom.

Eight countries remain out of scope, namely the Czech Republic, Estonia, France, Lithuania, Luxembourg, Poland, Slovakia, and Finland; as they underwent no programme nor did they receive any country-specific recommendation for their financial sector. These countries are, however, occasionally mentioned as control group for reference.

This chapter presents the Member States on which the report will focus by briefly describing their national financial systems at the onset of the crisis in 2008. Furthermore, an overview of the main findings is presented.

1.1. THE NATIONAL FINANCIAL SYSTEMS AT THE ONSET OF THE CRISIS

The national financial systems are described along two dimensions. First, the diversity of the banking sector is illustrated by their size and degree of concentration. Second, in order to have an understanding of the health of the financial sector at the start of the crisis, some soundness indicators are presented, including indicators of profitability, capital adequacy, loan quality and for the existence of a housing bubble.

What comes out of this is the pronounced diversity of the national financial structures and that some indicators were already flashing in 2008 in some Member States like an oversized banking sector, pressure on profits or an incipient house bubble implosion. Furthermore, shortcomings in definitions of e.g. capital or non-performing loans make indicators sometimes difficult to interpret, in particular in the absence of an appropriate surveillance framework and harder to compare intra-EU.

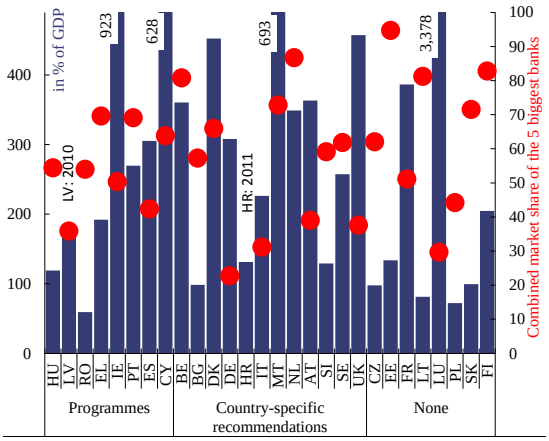
1.1.1. Size and concentration of national financial systems

Size

The size of the banking sector relative to GDP as such does not point to imbalances, but it may point to vulnerabilities (Graph I.1.1). A quite straightforward calculation stipulates that the larger the banking sector, the higher its potential rescue costs. A large aid package can turn into a substantial burden on public finances. The contingent government liability stemming from rescuing a large banking sector can spur various measures, such as bail-in in failing banks to avoid excessive fiscal burden or enhanced supervisory oversight as a preventive measure protecting financial stability.

The average total assets / GDP ratio is around 320% for both the EU and the euro area. Important is also to whom the banks pertain as contingent liabilities. In principle only domestic institutions represent a burden whilst subsidiaries are normally recapitalised by parent banks.

Graph I.1.1: **Banking system's size and concentration in 2008**



Source: ECB

Concentration

The concentration ratio traces the combined market share of the five biggest institutions (Graph I.1.1) used as a proxy for competition in local markets. A low concentration ratio indicates that

many players compete for bank clients and thus a high degree of competition.

Countries with larger populations count more credit institutions but also the nature of banks does matter. Countries with a strong cooperative sector count for more independent banks. Germany, for example, has about 1700 credit institutions; Austria, France, Italy and Poland each oversee close to 700 banks. The Netherlands and also to a lesser extent Belgium seem to be outliers as the union's eighth and ninth most populous countries have quite high concentration ratios. As the fourth biggest Dutch lender has exited the market the big three Dutch banks occupy already three quarters of the savings market([1]) themselves. Also in Belgium some concentration took place during the financial crisis as two players went bankrupt.

Whether high concentration is good or bad remains open for debate. Anecdotal evidence suggests that countries with a high number of independent banks and a larger diversity in banks' legal setup rebounded more quickly in 2009 as Germany, Austria, Italy experienced less of a credit crunch than the UK or Latvia where a few high street banks dominate the market. As these main players decided to quell lending in synchronisation, the fall in GDP in 2009 was comparatively higher than in countries where competition between many players and differing banking business models went on. It has to be recognised, though, that banking diversity is not enough to have a performing financial system as the long period of subdued growth in Italy illustrates.

On the other hand, publicly owned banks in Germany and Spain seem to have been hit disproportionally hard. Cooperative banks' fate differed in various countries. Whereas in continental Europe cooperatives generally outperformed their peers during the crisis, Greek and especially Cypriot cooperatives suffered large losses and most of them are in different stages of consolidation. Noteworthy too is that the first bank that collapsed during the financial crisis was a former cooperative, Northern Rock, a British bank which de-mutualised a few years earlier.

([1]) Cf. Dutch Ministry of Finance, 2013

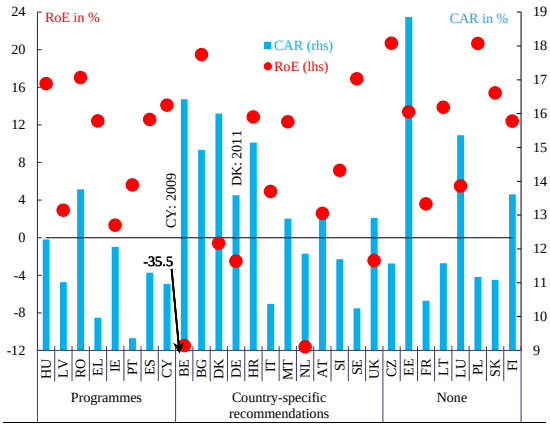
1.1.2. Soundness indicators

Banks' health can be measured with the help of profitability indicators. The last years were the least profitable on record. Also more early indicators, like the non-performing loans ratio or the provisioning level, that show how long a bank could withstand losses before needing extra capital are good proxies to gauge a bank's strength. Furthermore, attention is also paid to the economic environment in which banks operate. Many indicators can be used for this. Here house price developments have been selected for its direct relevance on the valuation of collateral in mortgages.

Profitability

Banks' profitability widely differs and is influenced foremost by micro factors, such as a bank's business model and its attitude towards risk. A second driver are exogenous macro features such as the country's cyclical position and overall risk perception as well as the judicial system's effectiveness and the monetary policy.

Graph I.1.2: **Return on equity and capital adequacy ratio in 2008**



Source: ECB

Since July 2007, commonly recognised as the start of the subprime crisis, profits fell as losses stemming from opaque securitisations grew (Graph I.1.2). The crisis escalated and projected inflation declined to which the ECB adjusted its monetary stance. In 2008 the ECB quartered interest rates which in turn dented banks' intermediation margins. Both impacted banks' earnings. Return on equity also declined because

of a numerator effect as after the collapse of Lehman Brothers regulators worldwide demanded banks to hold more equity which proved difficult given that many banks were closed out of capital markets and bereft of their capacity to generate capital organically.

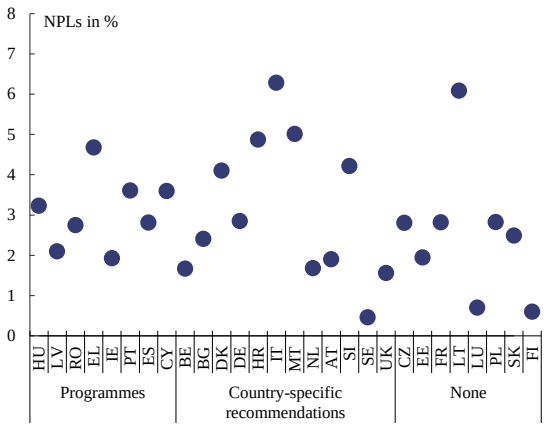
Capital ratios

The classic Basel II capital ratio is composed of core tier 1, lower tier 1, lower and higher tier 2, and, even though seldom, tier 3 instruments. Capital levels varied a lot among Member States in 2008 (Graph I.1.2). Ex post some proved to be too low. Furthermore, the financial crisis has shown that anything but paid-in share capital had no real loss-absorbing capacity, as especially in the early crisis phase banks would keep on remunerating lower tier capital instruments even where they were not obliged to whilst profitability was breaking away.

Loan quality

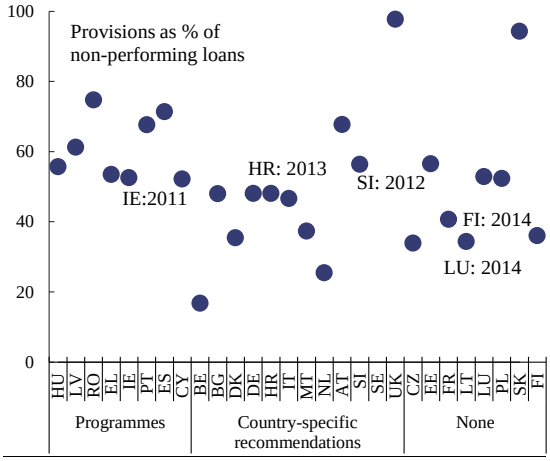
Credit intermediation is a bank's daily business. Thus its loan book's quality impacts directly onto its profitability. A leading indicator to measure the latter is the non-performing loan ratio. Also important is the coverage ratio, detailing to what percentage sour loans are covered by provisions.

Graph I.1.3: **Non-performing loans at the start of the crisis in 2008**



Source: ECB

Graph I.1.4: **Provisioning of non-performing loans in 2008**



Source: ECB

At the crisis' onset (Graph I.1.3), non-performing loan ratios in Italy and Lithuania were the only ones above 5%. Unsurprisingly, they rose most in programme countries. Indeed, Europe's periphery suffered from deeper economic woes compared to the core and undermined the banks' robustness to an extent which was difficult to foresee in 2008.

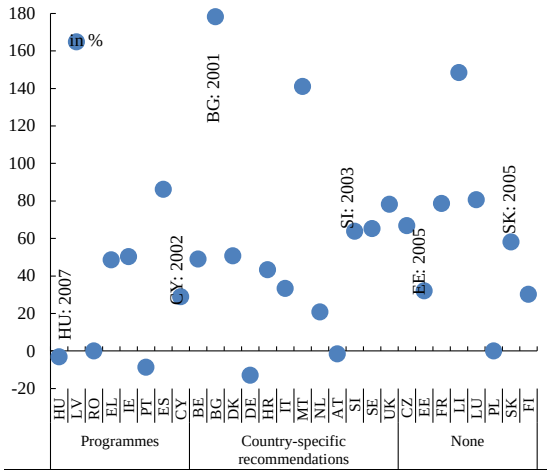
In this context it has to be remembered that non-performing loan definitions differed a lot across Europe in many dimensions. In terms of the amount to be included, some countries included only the overdue amount at earlier stages, while others immediately included the full exposure at risk. Even though most countries declared a loan non-performing after 90 days of overdue payments, some still allowed for 180 days.

Coverage ratios, the sum of provisions divided by doubtful and non-performing loans, also differed greatly at end 2008 (Graph I.1.4). Whether provisions suffice to cover losses from unpaid loans depends a lot on collateral value, its enforceability and the speed of the latter. If a bank's non-performing loan consists of mainly unpaid mortgages in a country with a fast jurisdiction and a lively real estate market lower provisions might be justified. On the other hand, if a bank has lent mainly to companies which operate in an environment where any investment loses value fast (e.g. information technology) then a regulator typically would insist on higher provisions.

The existence of a housing-bubble

Spain and even more so Ireland were running budgetary surpluses in the early 2000 whilst non-fiscal imbalances, particularly in the real estate sector, built up. In both countries real estate prices more than sextupled in the twenty years before they reached their peak in 2007. In the Maastricht criteria or the excessive deficit procedure not much attention was paid to non-fiscal imbalances. The European Commission reacted through proposing the macroeconomic imbalances procedure which monitors since 2011 inter alia house price developments. Within this macroeconomic imbalances procedure the European Union has addressed country-specific recommendations on the real estate sector to several countries.

Graph I.1.5: **Change in house price 2000-2008**



Source: ECB, Eurostat

At the beginning of the crisis, a diverse picture emerges (Graph I.1.5). In the period 2000-2008, German, Austrian, Portuguese and Hungarian prices fell, while in the Baltic countries and some smaller East-European Member States, there were clear signs of overheating in the housing market.

1.2. MAIN FINDINGS

Below the main findings per chapter are presented. The report is structured in three main parts, each divided in a number of chapters.

The first part "National financial sectors in a European context" contains two chapters. The first is an introduction and overview and presents the scope, focus and main findings. The second chapter about the evolving country surveillance in the EU explains the framework of the economic adjustment programmes and of the European Semester.

The second part "Response to the crisis" has seven chapters addressing subsequently liquidity needs, capital buffers, bank restructuring, impaired assets, supervision, contagion and private indebtedness.

The third part "Impact on macro financial stability" evaluates the results of the policy actions taken. The first two chapters assess the stabilisation of the banking and government sector and the private sector, while the last chapter reflects on the trade-off between stabilisation and growth.

Part I: National financial sectors in a European context

I.1 Overview of the national financial sectors

The report covers the period 2008 to 2015 as far as policy developments are concerned and updates until 2016 financial developments. It focuses on the countries that received an external assistance programme or a country-specific recommendation in the financial sector. Of the eight programme countries three were outside the euro area when they were assisted (Hungary, Latvia and Romania) and five inside (Ireland, Greece, Portugal, Spain and Cyprus). In only one Member State there is still an active adjustment programme (Greece), while most are under a post-programme surveillance until 75% of the borrowed money is repaid with two having already achieved this (Hungary and Latvia). In addition, the focus is on twelve Member States that received a country-specific recommendation for their financial sector (Belgium, Bulgaria, Denmark, Germany, Croatia, Italy, Malta, the Netherlands, Austria, Slovenia, Sweden and the United Kingdom).

When looking backwards at the onset of the financial crisis in 2008, great diversity in the economic and financial situation among the Member States is noted with some indicators sending warning signals to which in retrospect not enough attention has been paid. Some countries were characterised by a large banking system like

Ireland (923 % of GDP in 2008) or Cyprus (628 % of GDP), which can be a vulnerability as it increases the cost for public finances when the state has to be involved in bank rescue. A sizeable banking sector does not necessarily lead to problems as the case of Luxembourg illustrates (3,378% of GDP) pointing to the need to put indicators in context. Similarly, high concentration ratios with the five biggest banks having a market share above 70% (Greece, Portugal, Belgium, Malta, Lithuania, the Netherlands, Estonia, Finland) may raise competition concerns, but also point at welcome scale effects. Total capital adequacy ratios varied also a lot and in 2008 a few Member States were below 11% (Greece, Portugal, Cyprus, Italy, Sweden, France). The extent to which this is an issue depends on other factors like profitability, loan quality or provisions. Partly due to shortcomings in definitions of e.g. capital or non-performing loans these indicators are sometimes difficult to interpret, in particular in the absence of an appropriate surveillance framework. A case in point is the different measurement of non-performing loans making cross-country comparisons difficult. In 2008, the highest non-performing loan ratio was observed in Italy at 6.1%, compared to e.g. 3.6% Cyprus, but in the latter country collateralised loans in arrears were not counted. Similarly, provisioning levels of above 70% of non-performing loans in some countries, e.g. Latvia or Spain, lose their reassuring signal when collateral valuations are overblown. In both countries, house prices in the period 2000-08 rose 160% and 80%, respectively. Several other countries were confronted with housing prices rising above 50% in the same period (Ireland, Bulgaria, Malta, Slovenia, Sweden, United Kingdom, Czech Republic, France, Lithuania, Luxembourg, Slovakia) leading to problems of a different scale depending on the overall context and policy response.

I.2 The financial sector in the evolving country surveillance in the EU

Prior to the financial crisis, little attention was paid to the financial sector in the EU country surveillance. This changed and the financial sector became an integral part of the surveillance framework, both in the economic adjustment programmes and in the European Semester, due to the shock that the financial crisis was and its impact on the whole economy.

Eight Member States had recourse to economic adjustment programmes which covered besides policy guidance in the financial sector, also the fiscal domain and structural reforms. The importance of the financial sector conditionality varied across countries and through time, with a greater emphasis put on it in the euro area countries reflecting the seriousness of the crisis.

The programmes in Hungary and Latvia were initially heavily focused on the financial sector, but its relative importance declined in line with progress achieved in crisis management. By contrast, in Romania the importance of financial sector conditionality has been continuously increasing as well as in Greece in particular after the private sector involvement. The Spanish adjustment programme has been focusing almost exclusively on the banking sector. In Cyprus and Ireland in the beginning between one third and one half of the attention was for financial issues with structural reforms gaining in importance towards the end, while in the case of Portugal, a constant attention for financial problems was displayed throughout the programme.

Similar building blocks constituted a programme for the non-euro area countries as for euro area Member States, but for the latter group conditionality was generally more detailed. First, bank liquidity was tackled, but the issue presented itself differently in both groups due to role of the lender of last resort. In the non-euro countries foreign exchange was needed, which by definition cannot be created by the national central bank and thus was provided through balance of payment support. Furthermore, in order to avoid a dry-up of parent funding to their subsidiaries in these countries, the Vienna Initiative, an informal public-private coordination platform, was launched in parallel to the programme. In the euro area countries, when banks' market funding was impeded, the ECB provided liquidity through its monetary policy operations, while the national central banks assumed their role as lender of last resort and provided Emergency Liquidity Assistance. A key objective of the programmes in these countries was to restore a normal funding structure.

The second building block was bank restructuring in respect of the EU competition rules. In the non-euro area countries it concerned only a small

number of banks (Hungary: FHB Mortgage Bank; Latvia: Parex Bank and the Mortgage and Land Bank), while in the euro area countries a large part of the banking sector was affected. Ensuring an adequate capitalisation of viable banks was a key objective and to that end a specific financial envelope was set aside in the programmes. Asset quality reviews and stress tests were performed to have full transparency on the balance sheet of the banks and asset management companies has been set up to deal with impaired assets (e.g. NAMA in Ireland or SAREB in Spain) or legal initiatives were promoted to develop a secondary market for distressed assets (Cyprus, Greece). Banks were requested to deleverage and to focus on their core activities.

Improving regulation and supervision was the third element and particularly topical in the euro area countries. The programmes included conditionality on the valuation of collateral, connected lending, loan origination, the set-up of a credit register and provisioning of non-performing loans. Also the supervisory structure was addressed in e.g. Cyprus, where cooperative banks and commercial banks were brought under the single roof of the central bank, or Greece, where the insurance supervisor was integrated into the central bank.

The fourth building block was private debt restructuring and the financial sector contribution to growth. The insolvency regime was modernised to facilitate out-of-court negotiations between borrowers and lenders for which also the judiciary and legal framework had to be improved. Debt moratoria for a short period of time were imposed. Rules for debt restructuring were designed where a balance has to be struck between giving some breathing space to the over-indebted borrower and keeping up payment discipline. Gradually, in order to avoid a credit crunch as a consequence of the needed deleveraging, more attention has been paid to ensure sufficient finance for the economy. In particular, initiatives have been developed to help the small and medium-sized enterprises.

Since the start of the European Semester in 2011, the number of Member States with a country-specific recommendation in the financial sector has varied between 10 and 14 and as a few countries received more than one recommendation, the number of financial sector recommendations varied between 11 and 16 to be compared with an overall number of recommendations between 142 and 89 considering all Member States.

Their content depends on many factors, such as the structure of the financial sector, the phase in the economic cycle and national authorities' commitment to adopt relevant measures. The recommendations can be grouped according to four main themes. In the first category dealing with restructuring of the banking sector, including reforms of bank supervision, regulation and corporate governance, recommendations were addressed e.g. to Austria on foreign exposure, Slovenia on bank privatisation and balance sheet cleaning, Germany on the Landesbanken, Italy on the cooperative banks, Hungary on the bank levy and for Ireland, Spain and Cyprus completing the programme work. Second, concerns about excessive private indebtedness, deleveraging and the housing market were the focus in the Netherlands, Sweden, Denmark, United Kingdom and Portugal. The third domain comprises low asset quality, including resolution of non-performing loans and stress tests which were concerns in Slovenia, Bulgaria, Croatia and the ex-programme countries Cyprus and Spain, completed with recommendations on the judiciary reform and monitoring of the asset management company. Fourth, constraints in access to finance were addressed in Italy, Ireland Malta, Portugal, Lithuania and United Kingdom. Capital Markets Union being a key objective of the European Commission, this last category gained in prominence in 2016 with a greater emphasis promoting venture capital, exploiting better financial resources for small and medium-sized enterprises and facilitating access to capital markets.

The financial sector is also analysed as part of the macroeconomic imbalances procedure under which the Commission produces so-called in-depth reviews for Member States at risk of macroeconomic disturbances to be followed-up by enhanced country monitoring. In this context the financial sector is assessed to a varying degree of detail. For example, in the 2014 MIP round, it was analysed on a stand-alone basis for nine countries: Denmark, Germany, Ireland, Croatia, Luxembourg, Malta, the Netherlands, Slovenia and Sweden. In other cases, financial sector issues were analysed in the context of private

indebtedness (e.g. Belgium, Spain, France and Hungary) or access to finance for companies (e.g. Italy, UK). The analysis may take a specific angle, which was the case for Germany in 2014 when looking at the role of the financial sector in strengthening the current account surplus or in 2016 when the solvency of the insurance sector was addressed.

The EU country surveillance displays great flexibility with tailor made policy guidance to respond to specific country challenges, while making sure there was a consistent and coherent approach across countries.

Part II: Response to the crisis

II.1 Addressing the liquidity needs

A case in point is how the banks' liquidity needs were catered for. In the euro area the prime role is for the ECB as lender of last resort which has adjusted its framework for liquidity provision to banks, including the allotment mode for main and longer-term refinancing operations, collateral eligibility rules, outright asset purchases and swap lines with foreign central banks. This was not enough to absorb in some instances the liquidity pressures and national central banks, in accordance with established Eurosystem rules, had to provide Emergency Liquidity Assistance, when the interbank market dried up. The aggregate dependence of banks in some Members States on the monetary authorities was at certain moments very large (e.g. Greece or Cyprus at 36% or 15% of bank liabilities, compared to less than 2% in normal situations). The central banks in the non-euro area were less active, often constrained by monetary policy in a small open economy setting. Moreover, the banks which were often subsidiaries of large international groups were less dependent on interbank market funding.

Beyond the short-term, in two programme countries structural measures were taken to tackle the funding gap. In Ireland a target for the loan-to-deposit ratio of 122.5% was introduced as well as in Portugal of about 120% compared to well above 150% for banks in the beginning of the programme. In Cyprus and Greece, capital controls have been introduced to cope with extraordinary circumstances, respectively: the risk of a massive run of depositors following bail-in and the fear of state default. Thanks to the actions taken and the credibility provided by the overall programme context, liquidity pressures abated and the reliance on central bank borrowing could be reduced. In Cyprus, also the administrative restrictions could be withdrawn two years after their introduction, but not in Greece where the situation remains tense.

II.2 Restoring capital buffers

Liquidity problems turned into solvency problems and equity buffers risked to be eroded by the impact the recession had on asset quality. Therefore the adjustment programme required Ireland, Greece, Portugal, Spain and Cyprus to perform an asset quality review and stress test as well as Slovenia in the context of the European Semester. With respect to overall set-up, Portugal's stress test was somewhat different as it focused on the capacity of the banks to conduct such an exercise rather than having the explicit objective to determine the capital shortfall.

These exercises were coordinated at the national level contrary to the later assessments done by the European Banking Authority or the ECB. In order to ensure that best practices were observed, terms of reference and governance were clearly spelled out, but they were not identical across countries to reflect country specificities. In order to ensure the credibility of the exercise the international institutions were represented in the steering committee which had a different role and composition depending on the circumstances. The national central banks were usually in charge with the international institutions to a varying degree involved in the decision making. The ECB gradually gained in weight and e.g. in the third Greek exercise in 2015 only the Single Supervisory Mechanism was involved. By contrast, in Slovenia in 2013, the ECB was only observer and the IMF were not on board in the steering committee and the asset quality review and stress test were conducted in the context of the European Semester. As to the resulting capital needs, they differed considerably across Member States reflecting the state of their banking system, while a broadly consistent methodology has been used. Overtime experience has also been gained in the calibration of the base and adverse macroeconomic scenarios compared to what was ex post the outcome.

In a programme context the stress test led to foreseeing a financial envelope for banking sector repair. In absolute terms the amounts varied considerably (between EUR 100 billion in Spain and EUR 2.5 billion in Cyprus), as well as relative to GDP (highest share in Greece with 37%) or to the overall size of the financial assistance (100% in Spain). For confidence building reasons, the banking sector envelope was well endowed and in all countries not entirely used, but it is noteworthy that in Portugal considerable public funds for financial repair were mobilised beyond the funds provided externally, admittedly partly via the resolution fund which should in principle be recouped from the banks.

With respect to burden sharing, an effort was made to minimise the cost for the taxpayer and generally the state limited the injected funds in the ailing banks to less than half of the required capital, with the notable exceptions of Portugal (53% of total) and Slovenia (83% of total) due to the importance of some big public banks. Bail-in of junior debt occurred in all euro area countries with the larger contribution (16% of total) provided in Spain. Senior debt was not called upon except to a little extent in Greece and in a considerable way in Cyprus (37% of total) where deposits above EUR 100 000 were written down (left behind in resolution) in one bank and subject to value reduction (haircut) of 47.5% in another bank. Also in Denmark in 2011 senior debt (including uninsured deposits) was bailed-in, while in Portugal at end-2015, senior debt was re-transferred to the legacy entity of Banco Espírito Santo.

Nevertheless, the impact on public finances has been considerable, even if some of the State aid has been reimbursed in the meantime. In many countries the contribution of the state to financial sector repair still represents in 2015 more than 10% of total public debt: Greece (14.5%), Ireland (28.5%), Cyprus (19.3%), Germany (10.4%), Austria, (12.8%), Slovenia (20.4%), as well Latvia (13.6%) and Luxembourg (22.4%), but in the latter two countries overall public debt remains moderate. It has to be noted that not only in programme countries the state was called upon to play a significant role in bank rescue, but taking into account the value of the assets bought by the state, the long-term fiscal effect will be limited in these countries and felt especially in the programme countries due to the amount of the losses to be covered.

II.3 Bank restructuring and consolidation

Placing credit institutions on a sound footing following either individual or systemic financial turbulences led to restructuring and consolidation. Unviable banks were liquidated. The State aid rules and supervisory framework, against which this restructuring occurred, evolved over time. Often a significant part of the banking sector was affected and not only in programme countries. In Belgium and the Netherlands about 75% of the banking sector benefitted from public rescue measures in the early days of the financial crisis as well as about 35-40% of the banking sector in Germany and the UK. Also in Austria (18% of the banking sector) and Italy (7.5%) significant banks needed help, but as a whole their financial systems were less affected.

Country-specific recommendations followed these public rescue operations when the EU surveillance mechanism was reformed in 2010 with the introduction of the EU Semester. Based on this revamped EU surveillance framework, in Slovenia, Croatia and Bulgaria, recommendations were issued more timely, requesting to perform an asset quality review and stress test against the background of a boom/bust cycle in the real estate sector or governance issues. It contributed to cleaning up the balance sheet, a return of confidence and avoided major public intervention.

Concerning the programme countries, the banking sector in Member States outside the euro area was generally less affected by the need of public rescue operations compared to euro area countries. In the latter group the relative share of the banks in need of public support was larger in the countries where public finances were the major cause of the crisis: Greece (more than 75% of the banking sector), Portugal (about 60%) and Cyprus (40%, still more than 250% of GDP), but in this country also banking problems were at the origin of the crisis. In Ireland and Spain, where the real estate bust and its impact on the banks was one of the prime drivers of the crisis, the share of the banking sector affected was "only" 25-30% (still 300% of GDP in Ireland).

Generally, the larger the financial shock, as illustrated e.g. by the rise in non-performing loans, the larger the use of the liquidation or resolution tool to address the problem (Latvia, Lithuania and Cyprus) compared to restructuring the banks. In several countries, tough, large shocks were observed and restructuring compared to liquidation was important (Greece and Ireland) as the entities were considered systemic, while in other jurisdictions (Romania, Croatia) the difficulties caused could be solved without state intervention because the local bank was a subsidiary of a large group which displayed sufficient financial strength.

To address the excessive exposure of the banks, considerable downsizing of their balance sheets occurred, in particular when State aid was needed. The largest reduction since the outbreak of the financial crisis in 2008 to 2015 was noted in Ireland where bank balance sheets shrunk by almost 70%, but also Cyprus (-42%), Belgium (-32%) and Germany (-31%) witnessed large reductions. Due to home bias in particular foreign banks retreated. While in several Eastern European countries the foreign presence remained high, in others (Greece, Spain, Italy, Austria, Germany) it declined. Against this general trend, a notable increase from low levels in the share of foreign banks was observed in Belgium and the United Kingdom.

The restructuring led in several countries characterised by the presence of small banks to consolidation of which the benefits in terms of efficiency gains have to be weighed against competition concerns if the concentration ratio is high in particular when primarily foreign banks retreated, supposedly to be more dynamic. In Greece, for instance, the 5 largest domestic banks hold 95% of the market. Also in Germany and Italy some consolidation took place, but the number of banks remains quite large. In principle, consolidation such as in Germany and Italy should not raise competition concerns, except if those banks are confined to operate regionally and, thus, do not really enter into competition with each other.

Turning to some specific bank structures, the problems of overexpansion of the Spanish and German savings and public banks, representing 40% and one third of bank assets in the respective countries in 2009, show several similarities. They can be traced back to inappropriate governance providing the wrong incentives and weak supervision. As to the adjustment process, both countries managed to consolidate the sector, but Spain appears ahead of Germany in reforming savings banks' operational framework, including by placing them into private ownership, helped by the conditionality attached to the external financial assistance which facilitated the implementation of difficult measures.

The cooperative banking model with its specific stakeholder structure and lesser attention for the profit principle came under pressure in some countries during the financial crisis. Different answers were given to cope with the problems attuned to the concrete circumstances. In Ireland, given the high affiliation among the population and the historic importance, the sector was maintained through better regulation and supervision. In Greece, the role of cooperative banks is marginal and further consolidation is the way forward chosen. With loans up to 2/3 of GDP, the Cypriot cooperative banks are among the most important in relative terms in the EU. A capital hole of EUR 1.5 billion was found which was plugged by the state and the associated restructuring plan imposed further consolidation. In Italy, characterised by two types of cooperative banks, still another approach was followed. The large number of small independent mutualistic banks were required to form one or more groups to realise efficiency gains, while the bigger cooperative banks were asked to convert into listed companies to improve the governance structure.

In some countries the role the public sector plays in banking is bigger. With respect to state ownership in banks, this has been historically the case in Portugal and Slovenia. These countries have to be distinguished from e.g. Ireland or Greece, where public ownership increased a lot as a consequence of rescue operations and which is supposed to be temporary. Those two countries chose different paths. While Slovenia has firmly committed to reduce state ownership in its banking sector and has undertaken steps towards privatisation in order to strengthen governance and efficiency, it has recently slowed down its ambitions. Portugal has rather chosen to preserve the status quo. Concerning public investment banks which exist in seventeen Member States

already, Greece and Portugal explored the possibility in the context of the adjustment programme to set up such an institution to facilitate the financing of small and medium-sized enterprises.

II.4 Dealing with impaired assets

In dealing with impaired assets, several Member States established asset protection schemes and asset management companies depending on the concrete circumstances. When a bank had sufficient management capacity to handle the bad loans, these stayed on the balance sheet and losses could sometimes be absorbed by a state guarantee beyond a first tranche borne by the bank. From 2008 to 2011, twelve banks from Austria, Belgium, France, Germany, Luxemburg, the Netherlands, Spain and UK benefited from such a construction. The nominal value of the guaranteed assets ranged from EUR 100 million for Hypo Group Alpe Adria to GBP 281 billion for Royal Bank of Scotland.

When banks could not deal with impaired assets on their own, they transferred them to an asset management company to speed up balance sheet clean-up and reap scaling effects. In some cases there is one national asset management company e.g. in Ireland, Spain and Slovenia, while in other cases an asset management company is created for each bank (e.g. in Austria for Hypo Alpe Adria, Belgium for Fortis, Germany for WestLB or Hypo Real Estate). The size of the asset management companies can greatly vary from as little as EUR 1.1 billion (BAMC/DUTB in Slovenia, 2013) to as much as EUR 341.8 billion (FMS Wertmanagement in Germany, 2011). The fiscal capacity determines the involvement of the state in the funding and ownership of the asset management companies. In order to avoid consolidation of debt issued by the AMC with public debt in fiscally stretched countries, asset management companies were organised with private majority in the equity capital (Ireland, Spain). Otherwise, full government ownership and funding is the rule (e.g. UKAR in UK, Finansiel Stabilitet in Denmark).

Asset protection schemes with government guarantees are to be preferred when an upfront recognition losses is not realistic. When an actual cleaning of banks' balance sheet is needed, asset management companies can be effective. Challenges remain, though, for the effective transfer of risks when participating banks hold bonds issued by the Asset Management Companies. Also the long-term profitability of the Asset Management Companies is not ensured which may require the owners (often the state) to step in. In March 2016, all AMCs presented a substantial accumulated loss since their creation, except UKAR (United Kingdom), NAMA (Ireland) and Royal Park Investment (Belgium). FMS Wertmanagement (Germany) costed EUR 12.2 billion to the German taxpayers.

II.5 Improving regulation and supervision

The financial crisis has brought to the fore several weaknesses in the supervisory and regulatory frameworks of the financial sector in countries receiving multilateral financial assistance. Remedial action was taken against the background of the elaboration of a whole set of new legislation and the establishment of the Single Supervisory Mechanism of which the contours were not precisely known. The supervisory capacity was strengthened in many ways, including enhancing the independence of the supervisor, increasing staff levels, reinforcing on-site inspections and adapting the institutional set-up. With respect to the latter, supervision of the non-bank financial sector was centralised in one institution in Romania, the oversight of cooperative banks was merged into the central bank in Cyprus, some key banking competences (e.g. licensing and sanctioning) were transferred from the Ministry of Finance to the central bank in Spain and insurance supervision was integrated in the central bank in Greece.

Concerning regulation, the definition of non-performing loans was adjusted to reflect better the impaired nature of the loans in Portugal and Cyprus in the programme context ahead of the EU-wide harmonisation effort that the European Banking Authority undertook. In several countries, instructions were given to improve the valuation of collateral and adapt accordingly loan-loss provisions. More information was required about debt restructuring to avoid ever-greening and to incentivise finding a realistic solution for overdue loans for which banks were invited to reform their internal organisation. Tackling non-performing loans was and remains a major issue in

all countries and Ireland, Cyprus and Greece developed a targeting system. In order to improve the data quality on the credit history of borrowers, Ireland, Portugal, Spain and Cyprus adopted measures aimed at enhancing the existing credit registries. As part of the programme, capital requirements were tightened, asset quality reviews including stress tests were implemented and impaired loans disposed of. Concerning the latter, Ireland, Spain and Slovenia have set up national asset management companies whereas in Cyprus and Greece, efforts were made to create a secondary market for distressed assets.

II.6 Avoiding contagion

Financial interdependence and contagion have been dealt with at systemic level by, among other, the creation of the Single Supervisory Mechanism, the European Stability Mechanism, the Single Resolution Mechanism as well as the liquidity provision by the European Central Bank. Some specific issues, however, were dealt with at regional or country level.

First, the Vienna Initiative launched in January 2009, contributed to maintaining exposure of European banking groups to Central and East Europe and avoid a disorderly deleveraging in the region. It was a public-private partnership involving home and host supervisors, cross-border banking groups and international institutions. Since 2012 and against the background of the local banks relying more on domestic savings rather than funding from the parent, the Vienna Initiative reoriented its activities towards cross border supervisory issues, leading to, among other, the signing of a Memorandum of Understanding between some non-EU countries in the Western Balkans and the European Banking Authority. Also the coordination of national approaches for addressing the high level of non-performing loans became a field of activity and, more recently, the development of local capital markets inspired by the EU Action Plan on building a Capital Markets Union. The Vienna Initiative drew inspiration from a similar arrangement set up in the Nordic-Baltic banking cluster, which, however, did not involve the banks, nor the international institutions. The Nordic-Baltic cooperation focused on crisis management and resolution and was effective in containing the financial crisis in 2008-2009. Outside the scope of these multilateral stability arrangements, the swift resolution of two domestic banks in Lithuania in 2011-2013 deserves mentioning as this occurred also without external assistance programme and prevented contagion from spreading. The large funding gap (2.5% of GDP) was covered by the Deposit Guarantee Fund financed by a loan from the government.

Second, the sale of the Cypriot branches in Greece by the Cypriot Resolution Authority contributed to the downsizing of the banking system in Cyprus and to cutting a contagion channel between the island and Greece. Through the transaction the contingent liabilities for the Cypriot state related to the Greek deposits disappeared as well as the risk of spill-over to the fragile Greek banking system. The Greek branches were sold at a price reflecting the fair value of the impaired loans and allegations of a huge transfer of wealth from Cyprus to Greece are unfounded because based on a misunderstanding of the meaning of the capital gain booked on the operation. It was only an accounting profit on paper which would erode over time when the losses materialise. In the same context, a solution had to be found for the operations of Cypriot banks in Romania. Bail-in and instability in the Romanian deposit market was avoided as well as fire sales of assets by transferring the activities of the Cypriot branch to the subsidiary of the Cypriot bank operating in Romania.

II.7 Tackling private indebtedness

In many countries, private indebtedness rose rapidly or is above the threshold of 133% of GDP which is the level warranting closer monitoring under the macroeconomic imbalance procedure. A specific issue for some countries in Central and East Europe were the loans in foreign currency, mainly euro and Swiss franc, for which the debt service became heavy when the domestic currency lost value. Latvia addressed the issue with a new personal insolvency scheme involving partial debt write-off, as well as Hungary which obliged banks to convert the loans at a preferential exchange rate implying a 20-30% debt relief. A similar action was taken by Croatia with most of the costs shifted to the banks like in Hungary on the argument of lack of transparency in setting the applicable interest rate.

In the policy response, a delicate balance had to be steered between social concerns, moral hazard, financial stability and sufficient credit to the economy. Several countries provided a safety net, often in some form of a ban on foreclosures of primary dwellings (Hungary, Cyprus, and Greece) for the most distressed households or protection of the primary residence. The household insolvency framework was reformed to provide for debt discharge and a fresh start under certain conditions and supervisory action was taken to improve debt restructuring negotiations, eventually with the help of an ombudsman.

Key to success in corporate insolvency is to be able to distinguish between viable and non-viable firms, with the former to be helped to restructure and the latter to be liquidated. Member States took action in the context of adjustment programmes or country-specific recommendations with concrete circumstances shaping distinguishing features. In Cyprus, where payment discipline is an issue, insolvency procedures were modernised to strengthen the role of the receiver taking over the management of an insolvent business from its owner. Cyprus also reinforced the role of independent examiners to helping with the restructuring of viable companies. Bottlenecks in the judiciary framework causing implementation problems were addressed in Greece by introducing a pre-insolvency regime in 2010 and an out-of-court procedure in 2014. Ireland had already a modern corporate insolvency framework that served as inspiration for other programme countries and put in place a scheme to finance distressed SMEs. Against the background of rising non-performing loans, since 2012 Italy has accelerated the reforms, including fresh financing following insolvency, specialisation of the judiciary, shortening the delays in the sale of assets. Latvia strengthened in 2010 overall debt enforcement frameworks and adopted nonbinding guidelines for out-of-court debt restructuring. Spain and Portugal corrected the bias towards liquidation and put a lot of effort in improving out-of-court settlements and pre-insolvency tools.

The measures taken to tackle private indebtedness are slow in their effect and corporate and household debt remain at high levels in the euro area programme countries, notably Ireland, Portugal and Cyprus. Because of the shrinking denominator in Greece, private indebtedness hardly stabilises in terms of GDP, but continues to be below the alert level of the macroeconomic imbalance procedure. In the three non-euro area countries which received financial assistance, indebtedness is much lower, below 100 % of GDP, and on a downward track. In Denmark, the Netherlands and Sweden, private debt is also very high, difficult to trim and being addressed with country-specific recommendations trying to curb the excessive built-up of mortgage debt. Anyhow in these countries, as well as in Belgium, Luxembourg and the UK, the debt burden appeared more manageable than in the programme countries as the recession was shallower. In general, the share of corporate debt in total private indebtedness has declined since the financial crisis, with Portugal and Ireland among the exceptions reflecting the difficulty to restructure corporate debt. On the other hand, Spain appears to have been more efficient in decreasing its corporate debt stock and was able to reduce the debt service to income ratio below 50% for non-financial corporations unlike Portugal where the debt overhang continues to put pressure on company revenues.

Part III: Impact on macro financial stability

III.1 Stabilisation of the banking and government sector

Thanks to the measures taken at country and EU level great progress was made in the stabilisation of the banking system and the government sector which is intricately linked to it. This was validated by markets, but vulnerabilities remain.

With respect to the banking sector, the high level of non-performing loans and low profitability of banks are concerns. The situation is also very diverse among Member States. The liquidity situation of the banks improved and they were able to reduce significantly their reliance on Eurosystem liquidity providing operations. As regards capital levels, euro area programme countries had not only entered the crisis with lower capital levels than the non-euro area ones, but also reached very low points, notably Greece and Cyprus. In the meantime, capital buffers have been strengthened, sometimes with public support in the euro area programme countries, and mostly without in the non-euro area programme countries where the banks benefited from support from their

mother companies. Non-performing loan ratios have levelled off and declined significantly in some countries such as Ireland (from a peak at 25% to 13% in the beginning of 2016), Latvia (from 15% to 4%), Hungary (from 17% to 11%), Romania (from 22% to 12%) and Spain (from 9% to 6%), but remain high in Cyprus (50%) and Greece (37%) and appear difficult to curb in Italy (17%) and Portugal (15.5%). After banks had recorded large losses in the beginning of the crisis, profitability has stabilised. Greece is the only country where negative profitability in the banking sector remains quite pronounced given its unfinished recession and bank restructuring process. Overall, the banks' profitability prospects are seriously challenged by the cost of dealing with the legacy assets, the low interest rate environment and the anaemic economic recovery.

Markets have positively assessed the stabilisation, but bank share prices in euro area programme countries are lagging behind the recovery for EU banks, in particular in Cyprus, Greece, Ireland and Portugal. In these countries a very large part of the banking sector was affected and valuations remain extremely low compared to pre-crisis levels. In Spain where only the sector of the savings banks was severely affected, aggregate bank share prices compare more favourably, but remain below the rest of the EU. Also in Hungary and Romania bank share prices recovered well. A similar difference of valuation can be observed among certain countries that received a country-specific recommendation for the financial sector, i.e. Italy, Austria and Germany and countries without, such as France, which performed better. Finally, since 2013 credit ratings have posted a gradual and uneven recovery.

Because of the intricate links between the sovereign and the banking sector, government bond interest rates increased a lot during the financial crisis, but in the meantime stabilised and declined significantly through action taken at national and EU level. Yield differentials did, however, not narrow to the levels seen in the beginning of the creation of the single currency area as markets differentiate again between sovereigns on the basis of perceived credit risk. The sovereign-bank nexus increased as banks hold generally a larger share of government debt, on the one hand, and the state became in many Member States a bank share holder due to rescue operations, on the other hand. Nevertheless, spill-overs between the government sector and the bank sector are mitigated through the ECB programme of quantitative easing.

Success in implementing reform measures and sensitivity to contagion shaped the stabilisation of interest rates in the countries that lost market access due to the financial crisis. In the non-euro area countries (Hungary, Latvia, Romania) who applied for balance of payment support in the wake of Lehman's bankruptcy, government yields eased quickly upon programme start. Member States (Greece, Ireland, Portugal) heavily affected by the euro crisis in 2010-2011 took longer to normalise government yields because of contagion. In countries that nearly lost market access (Slovenia) in 2012-2013 or received financial assistance (Cyprus, Spain), delayed action due to difficult negotiations on the policies to be followed, notably in the banking sector, led to high and volatile sovereign yields before programme start or accepting country-specific recommendations. Yields came down quickly though, when measures were taken.

III.2 The flow of credit to the economy

The need to deleverage, the lack of economic demand, balance sheet repair by banks and uncertainties about the sustainability of public debt make it difficult to normalise credit flows to the economy and lending conditions remain fragmented along national borders. Overall credit stopped contracting in early 2015, but with an annual growth rate peaking only at about 2% in the end of 2016 lending remains subdued in the euro area. Based on survey results, demand for loans increased, in particular for housing. However, despite the ample supply of liquidity by the Eurosystem, banks which in certain cases also have capital constraints are hesitant to provide the credit because low economic growth weighs on the return of investment projects. Furthermore, credit demand is hampered by the debt overhang of firms and households which remains reflected in the high level of non-performing loans of some banks.

Member States differ widely in these respects as well as in the financing needs of the government influencing the funding costs of banks, which results in fragmentation of lending conditions along national borders. As a consequence, interest rates on similar types of corporate loans diverge

considerably in the euro area (e.g. between 2.5% in Germany to 4.5% and more in Ireland and Greece for floating rate loans up to EUR 1 million). Concerning lending growth in 2016, in about 10 Member States (including most of the programme countries) credit to households and firms is still declining, while in about an equal number (including the Baltics, Sweden and some Central European countries) credit is already expanding at an annual rate of more than 5%.

As the credit channel is faltering, one tried to develop alternative credit mechanisms or direct market access to increase the financing possibilities especially for small and medium-sized enterprises, which are more bank-dependent. Examples are the provision of loans by Microfinance Ireland directly via the government (2012) or indirectly via the set-up of a development bank in Portugal (2014) and concerning direct market access, the launching of "minibonds" in Italy (2012) and the Alternative Fixed-Income Market in Spain (2013). These and other initiatives have complemented bank credit, but cannot replace it as resources available to finance the economy grew by still a meagre 2% in 2015 in the euro area, much below 6% in 2007 when loans expanded at 8% and contributed 60% to the overall financing of the economy.

III.3 Trade-offs between stabilisation and growth

While the recent crisis may have challenged the speed and level of optimal financial deepening or optimal size of the banking sector, it illustrated also that financial sector stability is key to ensure long-term sustainable growth and avoid damaging cyclical volatility. However, in the short-term, financial regulation can have a negative impact on the recovery via two main transmission channels. First, the increase of capital levels, be it based on more demanding prudential rules or on the banks' own initiative, could restrict lending and second, restructuring often implies deleveraging and adjustments in the traditional relationships with clients or presence in certain market segments, again often at the banks' initiative in order to foster viability.

Furthermore, the cost of banking stabilisation in terms of deleveraging the balance sheet is mitigated if supported by a smaller and healthier banking sector and accompanied by consolidation of public finances. The impact of the pace of deleveraging is not clear cut, with some countries benefiting from frontloading the shrinking of the balance sheet (Germany, Latvia, Belgium, Ireland). It should also be noted that, despite increased regulation, the cost of bank debt issued on wholesale markets came down as well as the cost of capital as evidenced by rising share prices, with a positive impact on the reduction of lending rates to both households and non-financial corporates. In this respect the return of confidence and the role played by the abundant supply of liquidity by the ECB are to be emphasised.

In sum, the successful restoration of banking sector stability in Europe via financial sector programmes and other policies at European and national level contributed to maximizing Europe's long-term growth potential.

2. THE FINANCIAL SECTOR IN THE EVOLVING COUNTRY SURVEILLANCE IN THE EU

Prior to the financial crisis, the EU policy advice associated to the regular country surveillance paid little attention to the financial sector. This is no longer the case, as the financial sector has become an integral part of the country-specific policy guidance. The impetus for this significant change came from the prominent place that financial sector conditionality occupied in the eight adjustment programmes that have been negotiated and implemented since 2009 (Table I.2.1). This change of perspective has been further entrenched in the European Semester, where country-specific recommendations in the financial area have now been regularly introduced. The two sections of this chapter review the scope and content of the financial sector policy advice both in the so-called programme countries and in the country surveillance of the European Semester.

2.1. THE FINANCIAL SECTOR IN THE ECONOMIC ADJUSTMENT PROGRAMMES

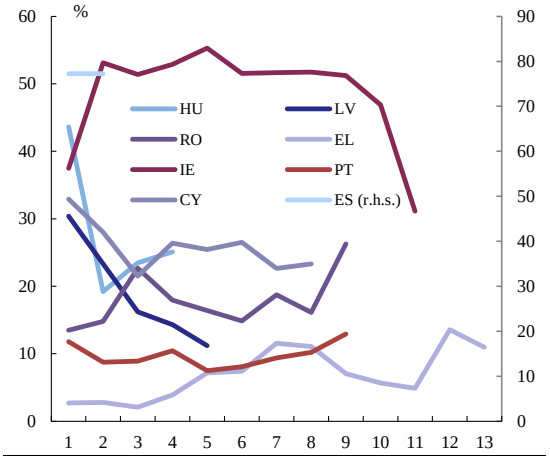
Together with budgetary policy, fiscal governance and structural reforms, financial sector adjustment has been one of the four building blocks of all eight adjustment programmes. The first sub-section tries to estimate the relative importance that the adjustment programmes ascribed to a reform of the financial sector. The next two sub-sections present analytical country-specific summaries of the financial sector conditionality for the non-euro area and the euro area countries respectively. The last and fourth sub-section highlights some stylised regularities on the ground of which preliminary conclusions are drawn.

2.1.1. The place of the financial sector in programme design

The relative importance of the financial sector conditionality is a qualitative variable that is difficult to grasp. It is, however, possible to formulate a rough estimate with the help of a word-count methodology borrowed from the political sciences. ([1]) Despite its obvious subjectivity, implied by inter-personal differences in drafting skills and use of language, this methodology does give a sense of the degree to which an economic adjustment programme has been geared towards a reform of the financial sector. Terzi et al. (2014) used this methodology to identify the focal reform of each economic programme.

The relative importance of the financial sector within a programme could be estimated by the percentage of words in each version of the updated Memoranda of Understanding agreed between the national authorities and the international partners-lenders (the so-called Troika composed of the IMF, the ECB and the Commission) that are dedicated to the reform of the financial sector (Graph I.2.1). The data suggest that the reform of the financial sector, though omnipresent, varied significantly in scope, both across countries and throughout the lifetime of an adjustment programme.

Graph I.2.1: **Relative importance of financial sector in Memorandum of Understanding**



Source: European Commission

The programmes in Hungary and Latvia were initially heavily focused on the financial sector. In light of the progress achieved with programme implementation and crisis management, the programmes were increasingly re-designed in other areas, namely fiscal governance and structural reforms. In the case of Romania, the importance of financial sector conditionality has been continuously increasing, notably under the precautionary arrangement. The initial programme documents for Greece devoted relatively little

([1]) See for instance Gabel et al. (2000) and Laver et al. (2003).

Table I.2.1: **External assistance programmes: intensity of surveillance and dates of the Memorandum of Understanding**

MoU dates		Hungary	Latvia	Romania	Greece	Ireland	Portugal	Spain	Cyprus
2008	I								
	II								
	III								
	IV	19 Nov							
2009	I	11 Mar	28 Jan						
	II	11 Jun		23 Jun					
	III		13 Jul						
	IV								
2010	I	21 Jan	22 Feb	22 Feb					
	II				3 May 1				
	III		20 Jul	2 Aug	6 Aug 1				
	IV	19 Nov: end			22 Nov 1	8 Dec			
2011	I			19 Jan	23 Feb 1				
	II		7 Jun	8 Apr 22 Jun: end	2 Jul 1	28 Apr	17 May		
	III			29 Jun P1		3 Sep	1 Sep		
	IV		21 Dec	27 Dec P1	31 Oct 1	28 Nov	9 Dec		
2012	I	Post Programme Surveillance	19 Jan: end		9 Mar 2	1 Mar	15 Mar		
	II		Post Programme Surveillance	29 Jun P1		25 Jun	27 Jun		
	III					14 Sep	14 Oct	20 Jul	
	IV				7 Dec 2		20 Dec		
2013	I					25 Jan			
	II			Jun: end P1	15 May 2	12 Apr 3 Jun	25 Jun		24 Apr
	III				24Jul 2	11 Sep			8 Aug
	IV			6 Nov P2		29 Nov 29 Nov: end	21 Oct		6 Nov
2014	I		Mar 2014					22 Jan: end	13 Mar
	II				15 April 2		14 Jun: end		16 Jun
	III					Post Programme Surveillance	Post Programme Surveillance	Post Programme Surveillance	24 Aug
	IV								
2015	I	Jan 2015							
	II				Jun: end 2				8 May
	III			Sep: end P2	19 Aug 3				28 Jul
	IV			Post Programme Surveillance	Oct and Dec 3				Nov (not adopted)
2016	I								Mar: end
	II	Post Programme Surveillance until 75% is repaid			16 Jun 3	⋮	⋮	⋮	Post Programme Surveillance
	⋮				⋮				
	⋮				18 Jul 2018: end 3	⋮	⋮	⋮	
	⋮			⋮	⋮	⋮	⋮	⋮	⋮
				May 2018	2047	2031	2026	2026	2029

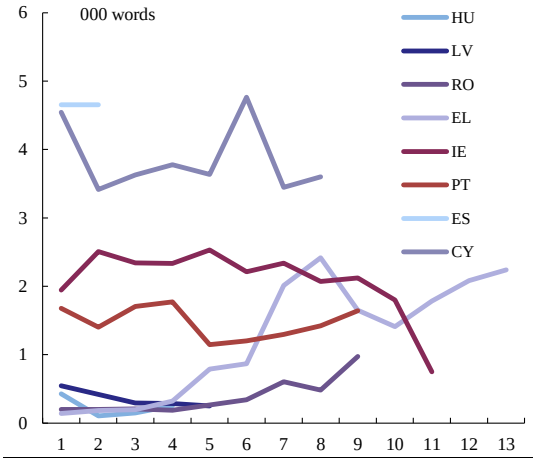
Romania: P1, P2 refer to first and second precautionary programme
Greece: 1, 2, 3 refer to first, second and third programme; frequent "milestones" supplemented the Memorandum of Understanding in October and December 2015
Source: European Commission

space to the financial sector, which was in a healthy state in the onset, but received much more attention after the private sector involvement, and most notably in the seventh version of the MoU. The Irish adjustment programme has been focused on the banking sector from the very beginning, even though other structural reforms gained in importance towards its end. In the case of Portugal, the financial sector has received in relatively terms less but constant attention. The Spanish programme has been designed as an almost exclusively banking sector programme. Finally, one third of the initial conditionality in Cyprus concerned the financial sector reform, even though other structural reforms have been gaining in prominence towards the end.

A cross-programme comparison of the importance of the financial sector is affected by the overall size of the programme. Thus, in addition to considering the relative share of the financial sector conditionality, one should also examine its

absolute size, as estimated by its overall length in number of words. As revealed by Graph I.2.2, the financial sector conditionality has been most developed in the programmes for Spain and Cyprus, followed by Ireland and Portugal.

Graph I.2.2: **Absolute size of the financial sector per Memorandum of Understanding**

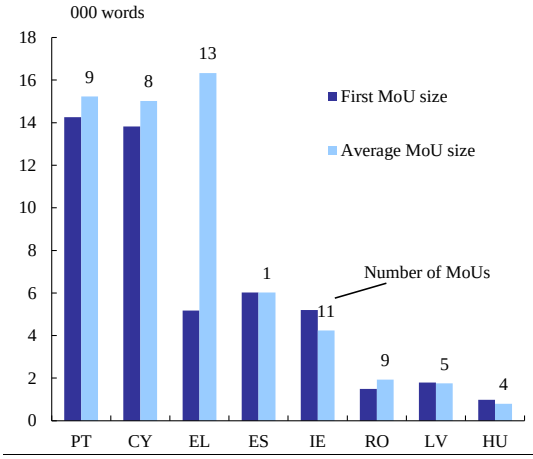


Source: European Commission

Most notably, the financial sector conditionality was much less developed in the case of non-euro area countries. The Greek programme is an interesting case, as its design evolved significantly, and became comparable to the Irish programme, with regards to its focus on the financial sector, only with the eighth version of the MoU.

It might also be instructive to put the absolute size of the financial sector conditionality to the overall programme scope and its change over time. A comparison between the absolute sizes, in terms of word length, of the first MoU and the average MoU over the lifetime of the programme indicates whether conditionality expanded or rather shrank (see Graph I.2.3). With the notable exceptions of Ireland and Hungary, conditionality became more demanding over time. This trend is especially perceptible in the case of Greece. Overall, conditionality has been the lengthiest in Greece, Portugal and Cyprus, and significantly shorter in the case of non-euro area countries.

Graph I.2.3: **Evolution of the absolute size of programme conditionality**



Source: European Commission

This very empirical and aggregate approach to the design of country-specific programmes reveals three regularities. First, the reform of the financial sector has received variable emphasis in the different countries. Second, programmes themselves evolved through time, due both to achievements with conditionality and to the changing economic conditions. Third, the programmes designed for the non-euro area countries, even though they were relatively well focused on the financial sector, attributed nevertheless less absolute importance to the latter in comparison to the programmes for the euro area countries.

2.1.2. The financial sector part of the adjustment programmes for the non-euro area countries: addressing the need for liquidity

The first and foremost goal of the financial sector conditionality in the programmes for non-euro area countries (Hungary, Latvia and Romania) was to keep banks' liquidity and to ensure funding pressures from abroad would not materialise. Enhanced regulation and supervision, bank restructuring and resolution as well as legal improvements in the relationship between lenders and borrowers have also been crucial elements of the programme design. While banks' sufficient level of capitalisation has been an over-arching principle, it is difficult to identify a specific policy action in that respect.

The sharp contraction in the international inter-bank markets, following the Lehman bankruptcy, instigated worries that liquidity constraints would lead the foreign banking groups to restrict funding to Central and Eastern Europe and to pull out of the region. This, in turn, would have created liquidity problems for the domestic banks that could have evolved into a classical bank run. These concerns pushed supervisors from the region to organise the Vienna initiative, intermediated by the IMF and the European Commission services, and by means of which funding commitments from the mother banks were secured. Formally, the Vienna initiative is not part of the programme design. However, it ran in parallel and the programmes for HU and LV both make explicit reference to it.

In addition, the programme for Hungary introduced a support package for the financial institutions. In Latvia, EUR 650 million (about 9% of the overall envelope) were earmarked for financial sector stabilisation measures. Monitoring of liquidity conditions was stepped up through intensified reporting to the Central Bank in all three countries. At the same time, the programmes were designed in such a way that any build-up of excess liquidity should be avoided. In Latvia, the conditionality established that the Bank of Latvia would use the minimum reserve requirement to avoid credit expansion beyond real growth. In Romania, the Memorandum of Understanding reiterated the inflation targeting objective of the National Bank of Romania.

Next to ensuring adequate funding and sufficient liquidity, improving regulation and supervision has been the second most important policy area of the financial sector conditionality. In Hungary, the emphasis was put on the establishment of prudent loan-to-value ratios, a better integration of both credit and foreign exchange risks, functioning credit registry, improved Deposit Guarantee Scheme, cross-border supervision, a mechanism for early remedial action by the Central Bank as well as enhanced oversight of insurance and credit brokers. Similar concerns, namely a disaggregated credit risk analysis, factoring in foreign exchange exposures and cross-sector links, prudent LTV ratios, remedial powers and timely repayment to deposits in the event of bank resolution, prevailed in Latvia. The commitment to ensure proper risk profile-adjusted loss provisioning by banks and adequate capitalisation was a new element of the Latvian programme. This became a focal point of the Romanian programme, which required the early provision of capital in order to ensure an ex ante 10% capital ratio at the beginning of the programme period. The strengthening of the remedial powers of the National Bank of Romania, the independence of the non-bank supervisors and the streamlining of the Deposit Guarantee Scheme were the focus of improving supervision and regulation in Romania.

The third building block of the financial sector conditionality concerned bank restructuring. In addition to enhancing authorities' remedial powers as mentioned above, each programme explicitly referred to ongoing restructuring cases. The programmes required national commitments to conform to the EU competition framework, namely by limiting in time and scope any state support that should also be provided at a State aid compatible remuneration. Thus, references to State aid rules and to specific ongoing cases progressively made their way into the Memoranda of Understanding. The regularisation of the State support to the FHB Mortgage Bank became an element of the programme for Hungary. In Latvia the authorities committed to implement swiftly the restructuring plan for Parex Bank and the transformation plan for the Mortgage and Land Bank. Furthermore, the gradual release of the funds earmarked for financial stabilisation to the general budget was conditioned on tangible progress with the restructuring of these two institutions.

The fourth policy initiative in the non-euro area countries concerned debt restructuring and the legal changes that it required. The programmes favoured market-based solutions and encouraged facilitation of negotiations between lenders and borrowers in an improved judiciary and legal framework. Debt restructuring was perceived as advantageous for both parties: it allowed borrowers to resume payments under the modified terms and it stabilised the quality of lenders' assets. The programmes did not favour a specific party of the relationship. This is ultimately illustrated by the fact that the Romanian authorities committed to refrain from legislative initiatives that would undermine credit discipline.

In addition to these four general building blocks, the programme for each country included specific elements that were meant to address a particular domestic situation. The very first Memoranda of Understanding were focused on the programmes' overall objectives and priorities, while the later updated versions contained more details, notably on specific legislative changes to be achieved according to a well-determined calendar. The three non-euro area programmes were started between November 2008 and June 2009, i.e. roughly one year ahead of the first adjustment programme for a euro area country. Thus, one should expect that the euro area programmes would reflect the different priorities of the evolved economic and financial conditions.

2.1.3. The financial sector reform in the adjustment programmes for the euro area countries: restoring market funding

Even though liquidity is a universal concern for all modern banks because of the structural maturity mismatch between their assets and their liabilities, ([1]) the euro area banking system did not have to face liquidity shortage during the recent crisis. Indeed, access to the Eurosystem open-market operations was generally enhanced. When recourse to regular Eurosystem liquidity could not be granted for lack of collateral, emergency liquidity assistance was usually secured from the national central bank. ([2]) Thus, the availability of a contingent lender-of-last resort in the euro area, in the context of contracting inter-bank markets, resulted in a very pronounced substitution between wholesale funding and central bank funding. For a number of so-called peripheral countries, the problem of increased and possibly systemic reliance on central bank funding became the pressing issue. As a consequence, the five adjustment programmes for the euro area countries (Greece, Ireland, Portugal, Spain and Cyprus) were designed with the explicit goal to restore market funding in the mid-term. One can identify four inter-related building blocks of the full-fledged financial sector reforms that aimed at re-opening market access.

First, ensuring adequate capitalisation of all viable institutions was the over-arching financial sector policy of all euro area adjustment programmes. ([3]) Several measures were taken in that direction. Capital was required beyond the minimum regulatory core tier 1 ratio (10% in Greece, 12% at the programme's start in Ireland, 10% in Portugal and 9% in Cyprus). Should banks fail to attract private investors, the programmes' funding envelopes included sufficient amounts to allow the government to assist banks' recapitalisation. For instance, the Hellenic Financial Stability Fund (EUR 10 billion, subsequently extended to 50 and 75 billion) was created in Greece and the Bank Solvency Support Facility (EUR 12 billion) was set up in Portugal. In other cases, the funding was made available directly to the government. State funded recapitalisations were systematically subject to prior approval by Directorate General Competition from the European Commission after providing evidence of compliance with a few guiding principles: viability of the new entity as per realistic business projections for the next five-year period, burden sharing (contribution of equity holders, hybrid capital holders and subordinated debt holders, a State-aid compatible remuneration for the public support received and divestment from non-core activities) and compensatory measures to avoid undue distortions of competition.

This very strong emphasis on properly recapitalising viable institutions is really distinguishing the programmes for the euro area countries from the conditionality design for the non-euro area countries. The latter, of course, did not deny the importance of having ample capital buffers. However, this was perceived as less of an issue. On the contrary, for the peripheral euro area countries, the entire programme framework was geared towards ensuring sufficient capital for the viable institutions. This was perceived as a prerequisite for gradually restoring investors'

([1]) This maturity mismatch is an implication of the fact that contemporary banks keep fractional reserves only, i.e. only a (very) limited amount of the outstanding deposits is kept in cash, the remaining (large) amounts being lent out in claims maturing between one day and thirty years (in some cases even more or without maturity, e.g. amortisation free mortgage loans in Denmark, Sweden).

([2]) The first chapter of the second part addresses in detail the issue of providing liquidity during the crisis.

([3]) Generally speaking, capital insufficiency was more of a problem in the euro area countries. Most likely because of the strong foreign ownership, banks in the non-euro area countries were better capitalised, also in terms of quality of the capital. More on this issue, as well as on the policy initiatives to cope with capital insufficiency, is to be found in the second chapter of the second part of this publication.

confidence, and subsequently re-opening access to the wholesale market.

Second, in order to strengthen banks' viability, the programmes included measures aiming to improve the quality of banks' assets. A large number of diverse policy actions fall in this category. Asset quality reviews, by means of accounting and economic due diligence, targeted full transparency about the current state of the institutions' loan and security portfolios. These reviews, then, became a solid and confidence-inspiring basis for estimating the expected cumulative losses over the next three-year horizon, i.e. for conducting stress tests assuming a baseline and adverse scenario. The programmes required banks to cater for these future not-yet materialised losses and to further increase their capital upfront. ([1]) Furthermore, homogenous categories of bad real-estate development loans were segregated into asset management companies (NAMA in Ireland and SAREB in Spain) in an effort to clean banks' balance sheets. Non-viable institutions were resolved. ([2])

Balance sheet deleveraging and managing arrears were two other measures ultimately directed at strengthening banks' soundness. Deleveraging, which was an explicit goal from the very beginning in Ireland, Portugal and Cyprus, was also motivated by macro-financial concerns about the high level of private sector indebtedness. ([3]) From a more limited financial sector point of view, it achieved re-focusing of the business activities around the field of expertise with the view of attracting investors. As programme implementation advanced, it became increasingly evident that market access could not be restored before the stock of non-performing loans started to be pro-actively managed. The authorities issued guidance on how to improve the lender-borrower relationship. Banks were required, as for instance in Ireland and Cyprus, to submit strategies for promptly dealing with arrears, in an effort to limit the build-up of bad assets and to increase loan repayment, and hence overall profitability. With respect to this policy of repairing and strengthening banks' balance sheets, the programmes for the euro area countries were much more developed than in the case of the non-euro area countries.

The third building block of the financial sector reform concerned improvements in regulation and supervision. Some general principles, such as adopting more conservative prudential regulations on valuation of collateral, loan origination, provisioning for NPLs, connected lending and governance issues prevailed in all programmes. The financial sector conditionality also contained very detailed recommendations addressing the country's own specificities, such as unifying supervision and regulation of commercial banks and cooperative credit institutions in Cyprus, transferring supervision of insurance undertakings to the central bank in Greece or also reforming the personal debt regime in Ireland. With respect to this aspect, the programme design does not differ much between the euro area and the non-euro area countries, but went into greater detail.

([1]) Individual cases differ significantly here. In some cases (Ireland, Cyprus), the stress-tested capital needs were computed before the start of the programme. In other cases (Greece and Portugal), the requirement to carry out full-fledged due diligence and the linked stress tests was part of the programme conditionality itself. This is to say that some conditionality has been formulated outside the Memorandum of Understanding.

([2]) Here, again, in some cases bank resolution was part of the programme conditionality *stricto sensu* (Ireland and Spain), while it occurred before the start of the programme in Cyprus.

([3]) Most programmes, as in the case of Portugal and Cyprus, followed the specific goal of addressing the problem of private sector over-indebtedness. Greece with its low private sector debt and record high public debt was the notable exception in this regard, facing specific challenges such as the devastating impact of losses from the sovereign debt restructuring on banks' balance sheets.

Box I.2.1: **From the broad economic policy guidelines to the two-pack: increased attention to the national financial sectors in the EU surveillance framework**

Following the Maastricht Treaty in 1992, multilateral surveillance was strengthened (Deroose, Hodson and Kuhlmann, 2008) as it was realised that in a monetary union early detection of divergent trends is key for a harmonious development (article 121.2 of the EU Treaty):

> The Council shall, on a recommendation from the Commission, formulate a draft for the broad guidelines of the economic policies of the Member States and of the Union, and shall report its findings to the European Council. The European Council shall, acting on the basis of the report from the Council, discuss a conclusion on the broad guidelines of the economic policies of the Member States and of the Union. On the basis of this conclusion, the Council shall adopt a recommendation setting out these broad guidelines. The Council shall inform the European Parliament of its recommendation.

The first broad economic guidelines were adopted in 1993 with little attention for countries and national financial sectors. The first country-specific guidelines appeared in 1998 and addressed public finances, while for financial issues EU-wide guidelines were formulated. From 2000 there is growing attention for the country level concerning SME finance, capital markets and regulation of financial services. Since the financial crisis in the late 2000s and the introduction of the European Semester in 2011, national financial sectors gained further in importance with a focus on stability oriented recommendations away from the earlier growth promoting policy guidelines.

In 2013, the so-called two-pack was adopted. It contains a regulation on assessing draft budgetary plans and a regulation on enhanced surveillance of Member States in the euro area in case of threats to their financial stability. The latter codifies the procedures and tools to use when financial stability is at risk (European Commission, 2013). First, the enhanced surveillance of the Commission is in liaison with the ECB and with the relevant European Supervisory Authorities (European Banking Authority, European Insurance and Occupational Pensions Authority or European Securities and Markets Authority) and, where appropriate, the IMF. The Commission can request specific information or measures including performing an asset quality review and stress test, an audit of domestic financial supervision and disaggregated data of financial institutions. Second, the relations with the loan granting intergovernmental bodies (European Financial Stability Facility and European Stability Mechanism) are spelled out to ensure consistency in the policy framework. Third, a post-programme surveillance regime is created which remains in place until 75% of the financial assistance is repaid.

The fourth element of the financial sector programmes concerned the positive contribution of banks to economic growth. It appeared only progressively, as a counterbalance to the deleveraging objective. Policy makers and authorities considered that a golden middle had to be found between restructuring and downsizing an over-expanded banking sector and ensuring an adequate flow of credit to corporations, and especially small and medium-sized enterprises that are more dependent on bank credit. Thus, even though absent initially, the commitment for banks to avoid credit crunch and to contribute positively to the funding of the economy became omnipresent in the programmes. This trend, which can be considered also common to the programme design in the non-euro area countries, underlies the fact that policy makers have been continuously adapting the financial sector conditionality to the new economic conditions. Incidentally, this degree of flexibility suggests that the usual charge against programme conditionality that it is shaped according to the principle "one fits all" does not apply.

2.1.4. Stylised facts of the financial sector conditionality

A first generalisation to be drawn out of this short summary is the different nature of the financial sector conditionality in the non-euro area countries compared to the euro area countries. In the former,

with a problem of shortage of foreign currency, foreign assistance focused on providing that foreign liquidity, initially to the governments, which then trickled it down to the banks, in some cases through capital injections. In the latter, where the ECB was able to satisfy banks' demand for (euro) liquidity, ([1]) the opposite problem had to be resolved, namely how to reverse the trend of banks' increasing dependency on non-market funding sources provided by the Eurosystem. The problem was one of shortage of domestic currency in the retail and whole sale market.

Second, the design of the financial sector conditionality is remarkable by its flexibility, both across countries and through time. Programmes were clearly tailored to address individual country specificities. This means that they did not transpose some ideological models about how the financial sector should be organised universally. On the contrary, they tackled home-grown issues by adapting existing solutions. In addition, they evolved dynamically, reflecting not only the changing conditions, but also some concrete challenges with implementation. This flexibility has contributed to increase the country's ownership of the reform process, which has long been seen as key to its successful implementation (Giustiniani et al., 2005 p. 4).

Third, a financial sector reform, with a focus on the banking sector, has become an inseparable element of the internationally supported economic adjustment programmes. The shift towards a heavier reliance on structural conditionality in such programmes has been noted and debated in the literature (Goldstein 2001; Lee 2003). Lately, Woo (2013) advanced the hypothesis that the shift towards structural conditionality has been driven by a more lenient attitude towards fiscal reform, due to an increasing lack of political consensus at home. ([2])

Whether the financial sector has been or not the cause of the need for an economic adjustment programme seems to be irrelevant for the importance it takes in such a programme. Due to the inter-linkages between the real private economy, the government and the financial sector, banks are always affected at some point of time and need repair. This finding, namely that a financial sector reform is always needed whatever the sector's original contribution to the need for official foreign assistance, seems to have been fully internalised by both international and domestic policy makers. In other words, the political awareness of inter-sector dependences accounts for the prominent place of the financial sector in programme conditionality. This conclusion is confirmed by the role that the financial sector has come to play within the new tools of the regular economic surveillance in Europe, as explained in the next section of this chapter.

2.2. THE FINANCIAL SECTOR IN THE ENHANCED ECONOMIC SURVEILLANCE IN THE EUROPEAN UNION

The financial crisis of 2008-2009, with inter-bank liquidity freeze, markets turbulence and first Balance of Payments assistance programmes, followed by a deep economic recession in most of the continent, led policy makers to reconsider the EU economic governance framework. The crisis hit most severely the countries that accumulated macro-economic imbalances that were built over many years.

This uneven situation within the Single Market, and in particular within the euro area, put the European project under pressure and prompted calls for more effective economic surveillance and policy coordination.

The new framework for integrated economic surveillance in the EU was designed in the course of 2010 ([3]). The fundamental idea was to complement the existing mechanisms, such as the Excessive Deficit Procedure for fiscal surveillance, with new tools for monitoring and coordinating structural reforms. The EU-level actions were supposed to be concentrated in the first semester of

([1]) This is not to say that there was no problem of foreign exchange shortage in the euro area. The USD/EUR swap agreements concluded between the Federal Reserve and the ECB, and tapped extensively by the commercial banks, would suggest that European banks were short on US dollars.

([2]) The standard model that links programme design to bureaucratic interests, at home and within the international institutions, is to be found in Copelovitch (2010).

([3]) See e.g. the Commission communication "EUROPE 2020. A strategy for smart, sustainable and inclusive growth" of 3 March 2010.

each year, concluding with the adoption of country-specific recommendations. In the second, national semester, Member States were supposed to focus on implementation of the recommendations. The first European Semester cycle was launched in the beginning of 2011.

The European Semester provides an integrated framework for aligning the goals of national budgetary, growth and employment policies with European economic priorities. The cycle starts in November, when the European Commission publishes the Annual Growth Survey, which sets out overall economic and social priorities for the EU and provides Member States with generic policy guidance for the following year. Ahead of the adoption of the Annual Growth Survey the Commission discusses the key priorities at a plenary meeting of the European Parliament. This is followed by discussions with EU Member States. Following the endorsement of the overall priorities by the EU Heads of State or government in March, they feed into national economic and budgetary plans. By April, Member States present their national stability or convergence programmes and their national reform programmes. This is followed by a common assessment of these programmes, the proposal of country-specific recommendations to the EU Member States by the Commission in May and their adoption by the Council in July.

Since 2012, the macroeconomic imbalance procedure is launched in parallel. It was born out of the perception that the surveillance of economic policies should be broadened beyond budgetary issues since imbalances such as wide current account deficits or large private debt may jeopardise the proper functioning of the Single Market. The macroeconomic imbalance procedure also kicks off in November with an Alert Mechanism Report which is based on a scoreboard of a set of macroeconomic indicators, including indicators on external imbalances and competitiveness (e.g. current account balances and unit labour cost) and internal imbalances (e.g. private or public debt, house prices, non-consolidated financial sector liabilities). In the Alert Mechanism Report, the Commission decides which Member States warrant further examination in the form of an in-depth review. On the basis of the n-depth reviews the Commission concludes whether an imbalance exists in a Member State, and, if so, whether it is excessive or not. These findings feed into the formulation of the country-specific recommendations.

In 2015, the in-depth review reports were merged with the Staff Working Documents containing analysis underpinning the country-specific recommendations. The single analytical document called Country Report is published in February, taking into account comments from Member States (since 2017).

2.2.1. Financial sector in the EU integrated surveillance framework

In the early surveillance framework of the nineties the financial sector did not occupy the place it has now (Box I.2.1). Since the financial crisis there has been a continuous attention and the number of Member States with financial sector relevant country-specific recommendation remained quasi-constant in the recent years (Table I.2.2). The European Semester round in 2011 concluded with ten countries receiving recommendations for adjusting their financial sector policies. 2012 saw new recommendations added for Malta, the Netherlands and Austria.

Table I.2.2: **EU financial sector surveillance 2009-2016**

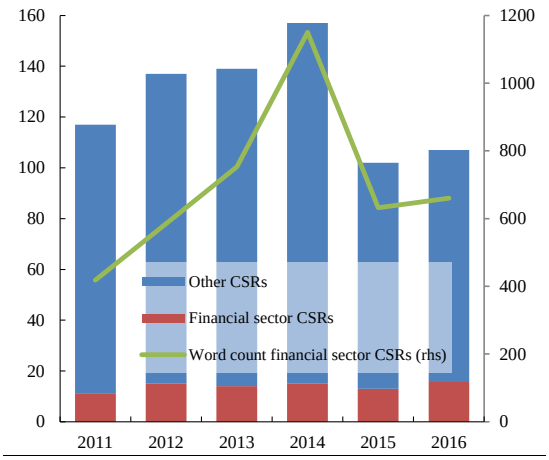
	2009	2010	2011	2012	2013	2014	2015	2016
BE			CSR	CSR				CSR
BG							CSR	CSR
DK			CSR	CSR				
DE			CSR	CSR	CSR	CSR		CSR
IE		P	P	P	P	CSR	CSR	CSR
EL		P	P	P	P	P	P	P
ES			CSR	P + CSR	P + CSR	CSR	CSR	
HR						CSR	CSR	CSR
IT			CSR	CSR	CSR	CSR	CSR	CSR
CY			CSR	CSR	P	P	P	CSR
LV	P	P	P	CSR	CSR			
LT								CSR
HU	P	P	CSR	CSR	CSR	CSR	CSR	
MT				CSR	CSR	CSR	CSR	
NL				CSR	CSR	CSR	CSR	CSR
AT				CSR	CSR	CSR	CSR	
PT			P	P	P	CSR	CSR	CSR
RO	P	P	P	P	P	P	P + CSR	CSR
SI			CSR	CSR	CSR	CSR	CSR	CSR
SE			CSR	CSR	CSR	CSR	CSR	CSR
UK			CSR	CSR	CSR	CSR		
MS with programme	3	5	5	5	6	3	3	1
MS with CSR			10	14	12	13	13	13

Source: European Commission

In the following years, as some country-specific recommendations were removed due to the implementation progress (Belgium, Denmark in 2013 and Latvia in 2014, Spain, Hungary, Malta and Austria in 2016), a recommendation for Croatia as a new Member State was added (2014).

2016 saw new recommendations related to implementation of the Capital Markets Union addressed to Belgium, Germany and Lithuania.

Graph I.2.4: **Financial sector country-specific recommendations versus the other**



Source: European Commission

There were also transitions from the European Semester monitoring mode to a programme (Cyprus in 2013) or the programme exits linked with entry in the European Semester cycle (Ireland and Portugal in 2014, Cyprus and Romania in 2016) or beefing up the existing country-specific recommendation (Spain, 2014). In 2015, a so called "streamlining" of the European Semester led to more concise recommendations in terms of word count. However, total number of financial sector country-specific recommendations remained stable, despite the overall reduction of the number of country-specific recommendations (Graph I.2.4). In 2016, thirteen Member States received financial sector specific recommendation, the same total number as in two previous years.

The financial sector makes also part of the macroeconomic imbalances procedure, which covers all EU Member States except for programme countries. In 2012, the first cycle of the macroeconomic imbalance procedure, the Commission carried out in-depth reviews for twelve Member States. The number of in-depth reviews increased to thirteen in 2013, seventeen in 2014, went down to sixteen in 2015 and up to nineteen in 2016. The financial sector is analysed to a varying degree of detail in most in-depth reviews. For example, in the 2014 round of the macroeconomic imbalance procedure, it was analysed on a stand-alone basis for nine countries: Denmark, Germany, Ireland, Croatia, Luxembourg, Malta, the Netherlands, Slovenia and Sweden. In other cases, financial sector issues were analysed in the context of private indebtedness (e.g. Belgium, Spain, France and Hungary) or access to finance for companies (e.g. Italy, United Kingdom). The analysis may take a specific angle, which was the case in looking at the role of the financial sector in strengthening the current account surplus in the 2014 in-depth review or solvency of the insurance sector in the 2016 in-depth review for Germany. Another case in point is the analysis of factors underlying expansion of the financial sector liabilities in the 2013 in-depth review for Finland. In the outcome of the 2016 in-depth review, six countries (Belgium, Estonia, Hungary, Austria, Romania and the United Kingdom) were found free of macroeconomic imbalances and are expected not to undergo the in-depth review in the next cycle.

2.2.2. Main issues addressed by country-specific recommendations

The financial sector country specific recommendations present quite a diversified collection. Their content and evolution depend on many factors, such as the structure of the financial sector, the phase in the economic cycle and – last but not least – the national authorities' commitment to adopt relevant measures.

Since the beginning of the European Semester, the recommendations have tackled various aspects of post-crisis banking sector repair and reform. Regarding the outcome of recent surveillance cycles (2014, 2015 and 2016), the recommendations can be grouped according to the four main themes: (1) restructuring of the banking sector, including reforms of bank supervision, regulation and corporate governance; (2) excessive private indebtedness, deleveraging and the housing market; (3) challenges of low asset quality, including resolution of non-performing loans and stress tests and (4) constraints in access to finance with the relevant aspects for Capital Markets Union added in 2016 cycle (Table I.2.3).

The first category: bank restructuring covers a wide range of reforms needed in various Member States. It was also significantly varying from year

to year. In 2014, Austria and Slovenia were in this group with their restructuring of state-owned banks, although both the origin and the scale of the problems were very different. The recommendation for Austria was fairly concise and general. In 2015, it was replaced with a recommendation focussing on addressing risks from foreign exposures and in 2016 no country-specific recommendation was addressed to Austria. The granularity of the early recommendations for Slovenia resembled the country-specific recommendations of post-programme countries, with focus on bank privatisation, governance issues and cleaning of balance sheets from impaired assets. It shrank overtime commensurate with the progress in banking sector reform by Slovenian authorities. In 2014, governance and efficiency issues featured in recommendations for Germany (the *Landesbanken*) and Italy (focus on *Banche Popolari*).

While the challenges remained unchanged for Italy, there was no financial sector country-specific recommendation for Germany in 2015 and the new one adopted in 2016 focused on a completely different issue, namely regulation of venture capital funds. For many years Hungary received a lot of attention in the European Semester due to its financial sector policies, such as the levy on banks or measures to protect foreign currency borrowers. The Commission recommended Hungary to reduce the burden of taxes imposed on financial institutions, to closely consult stakeholders on new policy initiatives and further enhance financial regulation and supervision. In 2016, the country-specific recommendation for Hungary was lifted.

Finally, various measures that were needed in follow-up to the programmes in Spain (e.g. completing the reform of the saving bank sector), Ireland (e.g. establishing a central credit registry), Portugal (e.g. monitoring banks' liquidity and solvency position, assessing banks' recovery plans) and Cyprus (insolvency and foreclosure frameworks, non-performing loans, access to finance), fall in this category. The different rates of progress in implementation in those countries are reflected in the evolution of the relevant country-specific recommendations. In 2016, the country-specific recommendation for Spain was abolished, narrowed down for Ireland and Portugal and quite elaborate for Cyprus.

Table I.2.3: **Main themes in financial sector country-specific recommendations**

	Bank restructuring	Indebtedness	Asset quality	Access to finance
BE	●			
BG	●		●	
DE	○●			
IE	○●		○●	○
ES	○		○	○
HR	●		○●	
IT	○●		○●	○
CY	●		●	●
LT				●
HU	○		○	○
MT				○
NL	●	○●		
AT	○			
PT	○	○	○●	○●
RO	●			
SI	○●		○●	●
SE		○●		
UK		○		○
Legend:	○ -2014		● -2016	

Source: European Commission

Second, several countries in the EU built up large stocks of private debt. Based on the analysis of macroeconomic imbalances, the Commission addressed relevant recommendations to countries most exposed to macro-financial risks. As household mortgage debt was the main driver of excessive indebtedness in the Netherlands, Sweden and the United Kingdom, those countries were requested to remove debt incentives from their tax system (e.g. phase out mortgage interest rate deductibility, increase recurrent property taxation) or to amend the financial supervisory framework (e.g. contain credit growth, increase the pace of amortisation of mortgages). Another set of actions was recommended for Portugal where corporate debt overhang was the main problem. The relevant country-specific recommendation referred to enhancing efficiency of the existing debt restructuring tools for companies and promoting early corporate debt restructuring, *inter alia* by introducing a supervisory early warning system for companies with a high probability of default due to excessive indebtedness. It was also recommended that Portugal addresses the bias in corporate taxation. As deleveraging tends to be a slow process, challenges remained broadly unchanged in the concerned countries until 2016.

Third, problems with asset quality are a crisis legacy in many EU countries which experienced bursting of housing bubble (impact on household exposures) and / or prolonged economic recession (impact on corporate exposures). In 2014, the

Commission recommended seven Member States (Table I.2.3) to step up efforts in resolving their high stocks of non-performing loans. Bulgaria joined this group in 2015 following turmoil in its banking sector in the second half of 2014. As a country with highest NPL ratio in the EU, Cyprus received the relevant recommendation after exit from the programme in 2016. The suggested measures include conducting of asset quality reviews and stress tests, increasing incentives for debt restructuring, developing corporate and personal insolvency frameworks, removing regulatory obstacles to foreclosure and enhancing capacity of judicial system. Monitoring of special companies managing impaired assets was included in the country-specific recommendations for Spain (for SAREB) and Slovenia (for BAMC ([1])). The recommendation for Croatia called for completion of the ECB Comprehensive Assessment with a screening exercise designed specifically for the Croatian banking sector, in particular for small and medium-sized banks. The high stock of NPLs remained the pervasive problem in a number of Member States also in 2016.

Fourth, the burden of a large stock of impaired assets in many cases prevented bank lending to the economy. In 2014, five out of seven countries that received a recommendation related to asset quality received also a recommendation to improve access to finance (Table I.2.3) ([2]). The constraints in access to finance were the problem facing mainly SMEs. The Commission recommended broadly improving access to non-bank financing (Italy, Spain) or, more specifically, facilitating access to capital markets and promoting development of venture capital funds (Malta, Portugal). Ireland received a comprehensive country-specific recommendation on policies for its SMEs sector, including a monitoring system for lending, better utilisation of the existing non-bank SME funds and enhancing the role of the Credit Office in mediating disputes between banks and companies. A similar, although more succinct, country-specific recommendation for the United Kingdom referred to effective functioning of the Business Bank and supporting increased presence of challenger banks. As interest rates remained low and market liquidity conditions improved, so did in general the conditions for companies' access to finance. In 2016, only four Member States received recommendations related to access to finance which focused mostly on alternative means of financing (Lithuania) and access to capital markets (Slovenia, Portugal).

Taking a broad look at the issues covered by the financial sector-specific recommendations, they increasingly focused on supporting economic growth, for instance by addressing obstacles to investment and development of capital markets in the context of Capital Markets Union. At the same time, the EU economic surveillance tools have continued to be used to prevent the emergence of imbalances stemming, such as local asset price bubbles or liquidity stress due to risky funding structures.

([1]) Bank Asset Management Company
([2]) Malta had a recommendation on NPLs in 2013 that was removed in 2014 in recognition of the Maltese authorities' progress in implementation of adequate measures.

Part II

Response to the crisis

1. ADDRESSING THE LIQUIDITY NEEDS

The financial crisis started with banks experiencing severe liquidity problems. The authorities' first response consisted in enhancing liquidity provision by the central banks. In the euro area, the whole framework for monetary policy evolved notably. A medium-term approach to the issue of liquidity required structural changes to banks' balance sheets. In the very short term, capital controls and restrictive measures in two cases appeared as the most efficient solution for keeping banks afloat.

1.1. THE NATIONAL CENTRAL BANKS AS LENDERS OF LAST RESORT

One of the economically most important functions of central banks is their capacity to act as lenders of last resort. This capacity is grounded in their control of the production of base money (currency outside the vaults and commercial banks' deposits) as well as in their discretionary use of this power. The next section will focus on the evolving framework of monetary policy in the euro area since the outburst of the crisis in 2008. The present section adopts a country-specific approach and documents liquidity provision in the eight programme countries at the national level.

A commercial bank appeals to last-resort loans from the monetary authority when it faces a net liquidity outflow that cannot be financed with private sources. Typically, the net liquidity outflow is due to deposit withdrawals from customers, to reimbursement demands on the inter-bank market from peer financial institutions, or to the repayment of a longer-term liability on the capital markets. The impossibility to finance privately these outflows is due to an insufficiency of liquid resources, and more generally to an eroded confidence in the capacity of the institution to service its liabilities.

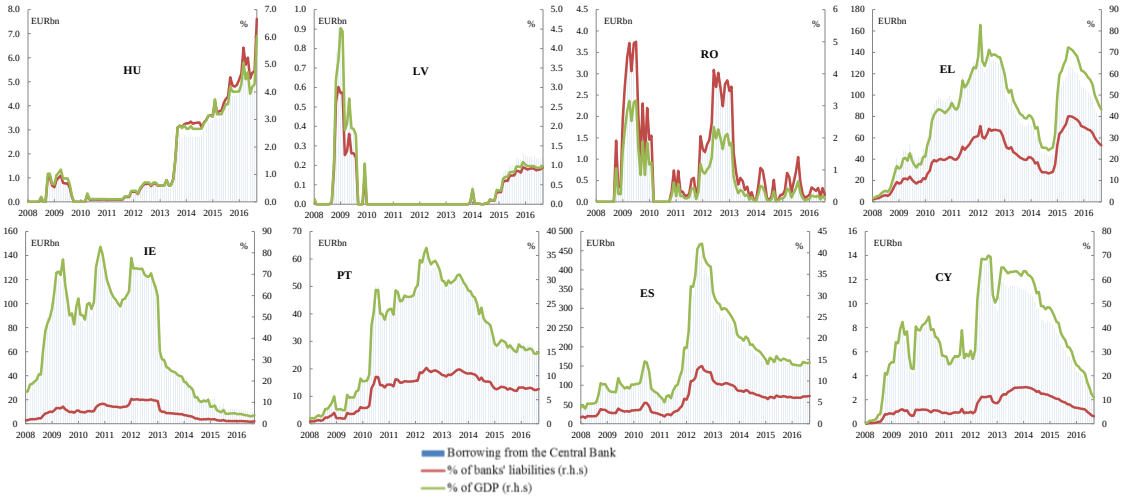
Because of the interconnectedness of commercial banks, namely through their lending on the inter-bank market, a loss of confidence in one institution is often followed by a more or less generalised run on the entire system. Not all creditors request redemption of their claims on the banks at the same time. The most alert creditors run first on the institutions, followed by those that are more inert. The identification of the alert group, in reality, depends very much on the specific funding model of the system. For instance, non-resident corporate depositors represented the alert group in Ireland. In Latvia, non-resident individual depositors started the withdrawals. In Spain, pair institutions from the inter-bank market asked for repayment first. It goes beyond the scope of this chapter to document the exact origin, timing and development of the liquidity pressures in each national economy. Our purpose here is to identify a number of stylised facts, based on the aggregate borrowings from the national central banks in the eight programme countries. Within this approach, three general observations can be made.

First, the response by the monetary authorities has been immediate (Graph II.1.1). The provision of liquidity increased already in August 2008, and intensified after September, i.e. in the aftermath of the Lehman Brothers bankruptcy. Thus, the initial phase of the financial crisis was liquidity-related. Because of that, the central banks intervened immediately, and contributed thereby to the swift and smooth financing of the requested repayments. Their liquidity provision should then be considered as the first policy measure to preserve financial stability.

Second, the effective response, in terms of overall supply of liquidity, has been much more limited in the non-euro area countries. The cross-country contrast in the maximum amounts borrowed by banks, both in gross and relative terms, is striking (Table II.1.1). While in Romania the commercial institutions refinanced at the central bank no more than 5% of their total funding, the requested support reached 36% in Greece, or 15% in Cyprus If considered relatively to the annual country production, banks in the euro area asked about 20 times more central bank liquidity than non-euro area banks. The following factors could explain this patent difference.

On the one hand, the financing of banks' liquidity needs in the euro area is characterised by two particularities. First, banks used to operate before the global financial crisis with very little extra liquidity reserves beyond the minimum reserve requirement, which in turn is very low (1% or 0% depending on the type of deposit). Second, for their regular daily liquidity needs, the institutions relied exclusively on the inter-bank market. In

Graph II.1.1: **Central bank lending to commercial banks in programme countries**



Source: ECB Statistical Data warehouse, IMF International Financial Statistics, Eurostat.

other words, banks used to refinance themselves: those with a liquidity shortage would borrow from those with a liquidity surplus. The latter would be willing to lend, because of the offered interest rate in the context of generalised confidence. Thus, any unexpected liquidity shortage at the level of the system makes unavoidable the recourse to new central bank liquidity, to be borrowed at an ad hoc basis.

Table II.1.1: **Peak borrowing from the monetary authority by country**

	Peak of borrowing in EURbn	Month	% of liabilities	% of GDP
HU	6.9	Sep-16	*2.92*	*2.79*
LV	0.9	Dec-08	*3.02*	*4.52*
RO	3.8	Apr-09	*5.00*	*3.16*
EL	158.5	Feb-12	*35.58*	*81.96*
IE	138.5	Nov-10	*11.63*	*87.60*
PT	61.6	Jun-12	*11.64*	*37.30*
ES	438.1	Aug-12	*13.51*	*42.56*
CY	13.6	Sep-12	*15.25*	*76.87*

Source: ECB, IMF, Eurostat.

On the other hand, very different mechanisms govern the financing of liquidity needs in the non-euro area countries. Often, the banking sector comprises a substantial foreign-owned segment that receives funding directly from its parent institutions. Limited business contacts with the domestically owned banks contribute to a limited size of the inter-bank market. In this context, banks are incentivised to build up their own liquidity buffers, above minimum liquidity reserve ratios which are also several times higher than in the euro area. Finally, the central banks often credibly stick to a monetary rule, e.g. an exchange rate target, an interest rate target or an inflation target, that prevents them from injecting liquidity in the system for financial stability reasons. All of these considerations explain why the liquidity support provided by non-euro area monetary authorities has been relatively limited.

Third, the entry into an international assistance programme is related to a progressive decline in banks' borrowing from the monetary authority. A number of factors contribute to this outcome. Typically, part of the international loan is used for recapitalising ailing institutions. Whether in cash or in the form of a central bank eligible government bond, this improves the system's liquidity situation, which makes possible the repayment of the loans from the central bank. In addition, programme conditionality requires that banks deleverage their balance sheets. Coupled with a return of confidence in banks, the deleveraging process leads not only to a contraction of the sector's balance sheet, but also to the attraction of net liquidity. This, again, makes possible the reduction of recourse to central bank refinancing operations.

The very large size of central bank lending to banks in euro area programme countries justifies that we review in some further details the specific mechanisms that the Eurosystem applied in this unprecedented expansion of its balance sheet, so far.

1.2. THE EVOLVING LENDING RULES OF THE EUROSYSTEM

In its standard functioning, prior to the outburst of the financial crisis, the Eurosystem has followed a straightforward framework of operations. Liquidity was provided through collateralised open-market operations, i.e. one-week loans (main refinancing operations) conducted weekly, and three-month loans (longer-term refinancing operations) conducted monthly. The eligible collateral consisted of high quality tradable securities. The overall envelope of the liquidity to be injected in the banking system was determined according to the forecast of the so-called autonomous factors (namely factors outside the direct Eurosystem control such as government deposits or banknotes in circulation) in order to ensure that the banking sector meets its minimum reserve requirements. The bank-by-bank distribution of this overall liquidity resulted from an open tender process that ultimately determined the banks' refinancing rate. Individual banks' demand for liquidity was totally, partially or not at all satisfied through this price-rationing process. Should a bank need additional liquidity that it could not secure on the private inter-bank market, it could borrow from the Eurosystem at its daily available marginal lending facility, even though at a higher interest rate. The Eurosystem could also absorb system-wide excess liquidity through a reverse tender procedure and the deposit facility was always available.

Although other intervention tools, like e.g. outright purchase or sales of tradable securities, were available prior to the crisis, they were not used in a systematic way. This framework ensured that the Eurosystem kept control of the inter-bank interest rate dynamics. Banks could operate in an environment of certainty, thanks to the longer-term liquidity provisions, which were also anchoring short-term interest rate expectations together with the deposit facility. For banks' very short-term liquidity management, the weekly operations were sufficient. Daily liquidity needs were catered for through the private inter-bank market. The banks' potential liquidity buffer de facto consisted in their holdings of marketable high-quality securities, which could be readily pledged for getting a loan from the Eurosystem.

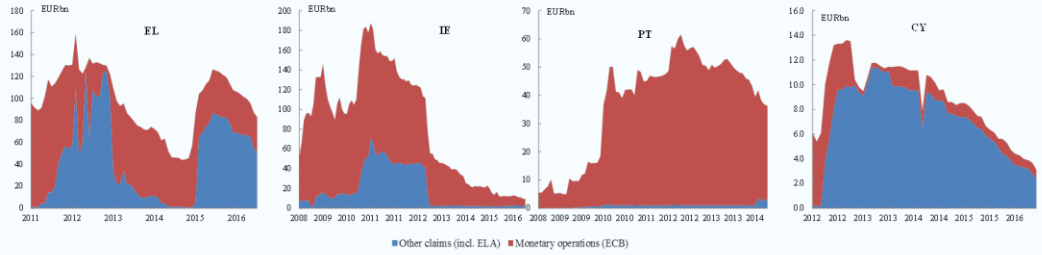
During the crisis period and its aftermath, in order to facilitate the smooth functioning of the interbank market and allow that it transmits the policy impulse, the Eurosystem has adapted its operational framework to facilitate access to liquidity. The changes could be grouped in four categories: allotment mode for main and long-term refinancing operations; enhanced collateral availability; acquisition of assets; and cooperation with foreign central banks. Additionally, where an individual institution could still have difficulties in finding extra liquidity, emergency liquidity assistance was frequently used (Box II.1.1).

First, the operational rules for main and long-term refinancing operations were modified. The Eurosystem introduced the unlimited allotment, conditional on eligible collateral, of all individual banks' request for liquidity at the main-refinancing rate. In addition, the maturity of the longer-term refinancing operations was increased progressively and on several occasions, until the introduction of four-year operations. This progressive prolongation of the term of the open-market operations reinforced with the forward guidance signalled the willingness of the Eurosystem to anchor expectations for continuously lower interest rates. The introduction of the full allotment implied that the Eurosystem has committed to provide as much liquidity as banks could bid for on the basis of their eligible collateral. It made its function as lender of last resort more visible.

Box II.1.1: Emergency liquidity assistance to banks

The Emergency Liquidity Assistance (ELA) is a last resort liquidity loan to a solvent financial institution. In the euro area, ELA is of the competence of the national central banks. Nevertheless, the Governing Council of the ECB, even though it does not approve formally the provision of ELA, must not object to it. ELA is meant to be exceptional, very-short term and implies a penalty interest rate that should incentivise the receiving institution to reimburse the loan without delay. Collateral rules apply for the granting of an ELA loan as in the case of the regular refinancing operations of the ECB. Concrete data on ELA is not readily available. However, because they are recorded by the national central banks in the category of other claims, the amounts of ELA can be estimated based on the fluctuations of this balance sheet entry (Graph 1).

Graph 1: **Estimated emergency liquidity assistance in selected euro area countries**



Source: National central banks

The estimated amounts of ELA granted in Greece, Ireland and Cyprus, and to a much lesser extent in Portugal, show that banks had recourse to ELA on a relative wide and permanent scale. It first of all points to the notable absence of eligible collateral. Furthermore, there have been important changes to the general framework of the regular refinancing operations, in particular relaxed collateral rules, and ELA has become an avoidable addition to the liquidity-providing measures to cope with the crisis in some countries. Finally, the cost of ELA, though higher than the cost of open-market operations, remains lower than the cost of funding that the institution would have paid in the inter-bank or capital markets. From this point of view, though a second best in absolute terms after the regular ECB monetary operations, ELA has become for some institutions the best available solution for managing the profit and loss account.

Second, given that the pool of banks' eligible collateral became the new operational limit to how much liquidity they could borrow, it became important to enhance collateral availability in order to avoid situations where significant parts of the banking system could not make full use of the Eurosystem's refinancing operations. The lower band of accepted third-party ratings was lowered. The minimum ratings of sovereign bonds can be waived as long as a country was positively reviewed for implementing its internationally sponsored economic adjustment programme. The acceptance as collateral of privately issued instruments, such as banks' covered bonds, was enlarged as long as the bonds could be traded on the market or received a government guarantee. Eligibility of banks' non-marketable loans was widened as long as they received a rating and proper risk-management systems have been implemented.

Third, the Eurosystem started conducting outright purchases of marketable assets. Two programmes were introduced in 2009 and 2011 for covered bank bonds, for an aggregate total of up to EUR 100 billion. A third covered bond programme, as well as an asset-backed securities purchase programme have been announced in late 2014. Another targeted purchase programme was introduced in 2010, in the middle of the outburst of the Greek crisis, for ensuring depth and liquidity in public and private debt securities markets that were dysfunctional and hampered the appropriate transmission of monetary policy. The liquidity injected in the context of this securities markets programme, which peaked at close to EUR 220 billion, has been sterilised through weekly deposits

at the Eurosystem, up to end-June 2014. In addition, the Eurosystem announced in August 2012 it stood ready to acquire additional securities from the markets, according to what was labelled outright monetary transactions. All of these outright purchase programmes, by opposition to regular collateralised lending operations, impacted on the prices of specific asset groups, or assets from specific countries. Thus, their purpose was to improve the direct transmission of monetary policy.

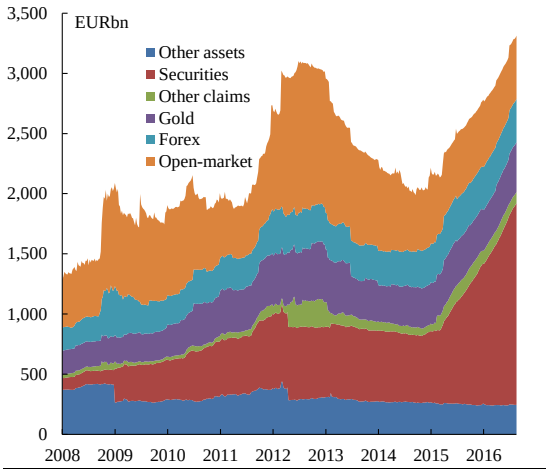
As from March 2015, the ECB started its expanded asset purchase programme, commonly referred to as the policy of quantitative easing. Under this programme, the ECB has acquired public and private debt instruments for an average monthly amount of EUR 60 billion (temporarily increased to EUR 80 billion between April 2016 and March 2017). The programme is expected to last until December 2017 and in any case until there is a sustained path towards achieving inflation rates below, but close to, 2% over the medium term. As of August 2016, the corporate sector purchase programme reached about EUR 20 billion, while the public sector purchase programme amounted to EUR 991 billion. The third covered bond purchase programme represented EUR 190 billion. Asset-backed securities for about EUR 20 billion completed the outstanding total of purchased assets for about EUR 1200 billion.

Fourth, the Eurosystem strengthened coordination with major foreign central banks. Beyond a series of coordinated announcements by the five largest central banks, this included agreements on foreign currency swaps. Based on these, provision of in particular US dollar liquidity by the Eurosystem increased significantly in late 2008 and 2011. European banks have limited capacity to borrow dollars directly from the Federal Reserve System. In theory, should European banks lack dollar liquidity, they could borrow euros from the Eurosystem, exchange them for dollars on the market, and pay back their maturing dollar obligations. However, this could result in a more or less sizable depreciation of the euro, to ensure the willingness of private actors to decrease their dollar holdings and to increase their euro holdings. Central banks can remove this risk if they enter into a mutual off-market exchange of their own currencies in swaps.

These policy measures have impacted the evolution and composition of the Eurosystem's consolidated balance sheet. Changes on the assets' side suggest five phases (Graph II.1.2). In the first phase, which last from end-September 2008 to end-January 2009, liquidity provision through refinancing operations resulted into an overall expansion of about EUR 700 million. In the second phase, which continued until the summer of 2011, the overall size of the balance sheet remained broadly unchanged at about EUR 2000 billion. However, there was a substitution between the tools used for providing liquidity. The Eurosystem increased its holdings of securities, at the expense of collateralised loans to the banks.

The third phase consisted of an overall expansion by about EUR 1 trillion, mainly through additional longer-term refinancing operations, and continued until the beginning of 2013. During the fourth phase, there has been a gradual contraction of the aggregate balance sheet back to its level of EUR 2000 billion, largely driven by repayments of long-term refinancing operations. In the fifth phase, which is ongoing since the beginning of 2015, the ECB is engineering a planned, unprecedented expansion of its balance sheet through the outright purchase of marketable securities.

Graph II.1.2: **Consolidated balance sheet of the Eurosystem: assets**

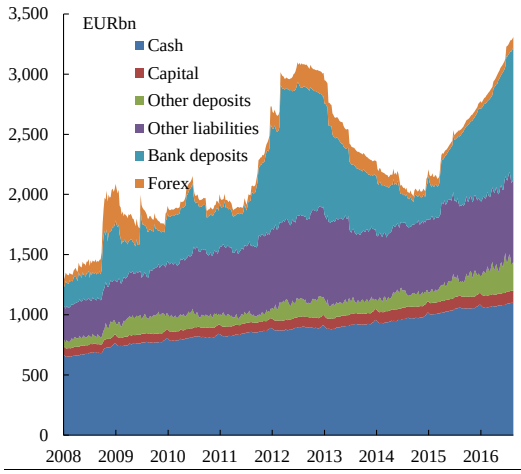


Source: ECB

The resulting changes in the liabilities of the Eurosystem indicate how the additional liquidity produced has allocated (Graph II.1.3). Two noticeable tendencies must be mentioned. First, the

stock of euro banknotes in circulation, has been steadily increasing since the end of 2008. Second, fluctuations in total assets are mainly mirrored by the expansion or contraction of commercial banks' aggregate reserves at the Eurosystem. Thus, further expansion of the quantitative easing will result in a build-up of excess bank reserves at the Eurosystem. These reserves bare a negative interest rate and pose a challenge for banks' profitability.

Graph II.1.3: **Consolidated balance sheet of the Eurosystem: liabilities**



Source: ECB

A static view of the aggregate change in the Eurosystem's balance sheet between end-2008 and end-2016 shows what has been the longer-term impact of the various policy tools mobilised by the Eurosystem. The overall expansion of about EUR 1864 billion originated primarily from the net acquisition of euro securities and of foreign currency assets (Table II.1.2). Ultimately, the stable increase of the standard liquidity providing refinancing operations has been marginal. There has been also a significant boosting of gold holdings due to a major price-induced revaluation effect. About one-fifth of the expansion corresponds to a higher stock of euro banknotes. Banks' reserves have increased by almost EUR 900 billion, i.e. about half of the overall expansion. The remaining of the extra liquidity was absorbed by liabilities to non-banks, including outside the euro area.

Table II.1.2: **Static changes in the balance sheet of the Eurosystem: September 2008 - August 2016**

ASSETS	EURbn	*in %*	*y-o-y*	LIABILITIES	EURbn	*in %*	*y-o-y*
Other assets	-173	*-41.2*	*-6.4*	Cash	413	*60.5*	*6.1*
Securities	1 565	*1 409*	*40.4*	Capital	29	*40.7*	*4.4*
Other claims	56	*145.8*	*11.9*	Other deposits	156	*183.3*	*13.9*
Gold	205	*98.4*	*8.9*	Other liabilities	377	*123.0*	*10.5*
Forex	152	*73.9*	*7.2*	Bank deposits	895	*438.2*	*23.4*
Open-market	59	*12.6*	*1.5*	Forex	-10	*-9.9*	*-1.3*
TOTAL	1 864	*128.6*	*10.9*	TOTAL	1 864	*128.6*	*10.9*

Source: ECB

Having presented the general developments in non-euro and euro area countries, this chapter will end with a few details on the special case of Cyprus, where liquidity pressures were addressed in a less conventional way.

1.3. MEDIUM-TERM STRUCTURAL SOLUTIONS TO LIQUIDITY ISSUES

Past the immediate liquidity crisis management, the authorities approached the issue of liquidity from a medium-term balance sheet point of view. More specifically, it was acknowledged that in the first place liquidity problems occurred because of banks' structural issues. It was discovered that funding through stable, retail, resources was insufficient and replaced by more volatile, wholesale, resources. Typically, funding on the inter-bank market, or even on the longer-term capital market, is considered less stable than funding through deposits because other banks and large debt holders are presumed to be financially more alert. Indeed, individual institutions' financial difficulties started precisely because of lack of refinancing on the financial markets. A structural solution to this problem was the requirement for banks to increase their reliance on funding through customer deposits.

To strengthen banks' liquidity in the medium term, the relation between assets and liabilities on their balance sheets had to be changed. On the one hand, to attract more customer deposits meant regaining clients' confidence, rebuilding brand names, and changing the public perception of the institution's image. On the other hand, to improve liquidity implied the sale of non-core assets and the working-out of non-performing exposures. In other words, it is in the context of improved deposit attraction coupled with successful deleveraging that liquidity was addressed in the medium term. This policy was pursued at national

Box II.1.2: **The principle of the free movement of capital in the EU Treaty**

The freedom of capital movements is firmly inscribed into the EU Treaty and only well justified one can turn it back:

Article 63

1. Within the framework of the provisions set out in this chapter, all restrictions on the movement of capital between Member States and between Member States and third countries shall be prohibited.

Article 65

1. The provisions of Article 63 shall be without prejudice to the right of Member States:
(b) to take all requisite measures to prevent infringements of national law and regulations, in particular in the field of taxation and the prudential supervision of financial institutions, or to lay down procedures for the declaration of capital movements for purposes of administrative or statistical information, or to take measures which are justified on grounds of public policy or public security.

The Commission took note of the introduction of capital controls in Cyprus and Greece and in the case of the latter country there was a formal statement issued on 29 June 2015. Therein the Commission acknowledges the introduction of the administrative measures as needed for the stability of the financial system which constitutes a matter of overriding public interest and policy. At the same time the Commission asks to abolish the controls as soon as possible.

level before the universal implementation of the net stable funding ratio in Basel III and consisted in a reduction in the loan-to-deposit ratio. It was explicitly integrated in the programme in Ireland and Portugal.

The Irish banks' liquidity profile, as a result of the fast credit expansion during the boom years, was financed largely by wholesale funding. With loan-to-deposit ratios significantly above the international average, hovering well above 150% for most banks, the authorities decided to introduce a target ratio of 122.5% by end-2013. In addition, in order to move towards a sounder and more sustainable funding structure and determine the liquidity needs of the Irish banking sector, the Central Bank of Ireland conducted a Prudential Liquidity Assessment Review in 2011. The goal of the Prudential Liquidity Assessment Review was to objectively quantity the effort required from each institution and to oversee the implementation process.

The Portuguese programme also was anchored in the search for a stable market-based funding position for the domestic banks. Funding plans targeted a reduction in the loan-to-deposit ratio to about 120% in order to alleviate the reliance on the Eurosystem funding. These plans were reviewed and updated quarterly in order to ensure that they remain consistent with the overall macroeconomic framework and that they do not impede banks' regular contribution to the funding of the economy.

1.4. THE SPECIAL CASE OF CYPRUS AND GREECE: THE IMPOSITION OF ADMINISTRATIVE MEASURES

Administrative measures, i.e. capital controls as a means to manage liquidity have been used only in two EU countries, first in Cyprus and then in Greece, and in Cyprus they have been abolished in the meantime. In the EU with its free movement of capital as one of the four basic freedoms next to free movement of people, goods and services (including establishment), one needs good reasons to justify capital controls temporarily (Box II.1.2 for the relevant EU Treaty articles).

In both countries financial stability concerns were at the heart of the problem and the fear of a disorderly run by savers on banks to collect their deposits. There were indications for that in the large deposit outflows before the capital controls were effectively introduced (Graph II.1.4). In Greece, depositors feared state default and Grexit implying redenomination of the currency in which savings would be paid out. For Cyprus, when it became clear that the two largest banks could not be recapitalised with public money and a bail-in of uninsured depositors was unavoidable, it was

feared that more banks would follow and there was a big risk of a general deposit drain.

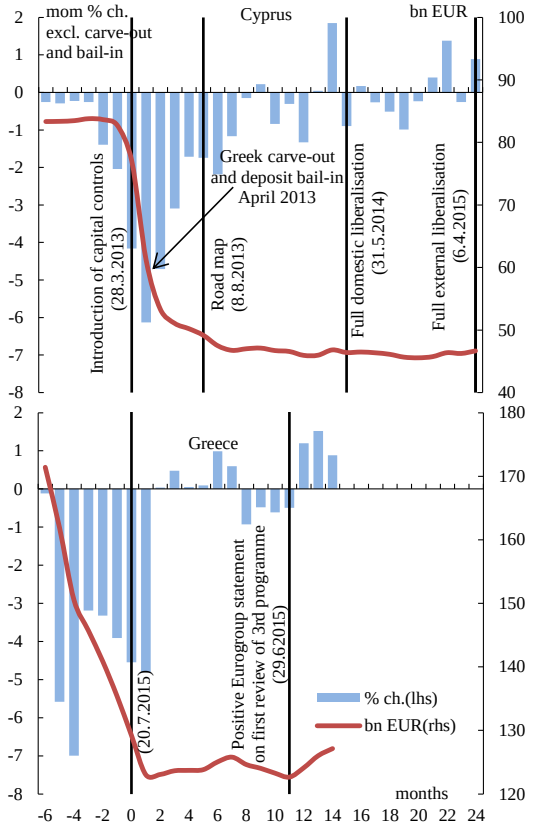
In order to operationalise the measures a distinction is to be made between, on the one hand, commercial transactions or personal payments which are allowed in order to minimise disruption of the economy and, on the other hand, financial transactions or capital flows, which are restricted to keep control of bank liquidity. In both countries, the measures were very strict in the beginning with some differences (Table II.1.3), reflecting the particular situation of the country. Against the background of a stalled second programme, difficult negotiations on a follow-up and possible exit from the euro area, the supply of bank notes was constrained and the limit on daily cash withdrawals was much lower in Greece than in Cyprus (EUR 60 versus EUR 300) where furthermore undrawn amounts could be collected the next day. By contrast, domestic interbank payments were severely monitored in Cyprus as two banks appeared in clearly worse shape, while in Greece the entire banking system was in the same position with no need to control financial flows between them.

The banking holiday which preceded the capital controls was also longer in Greece compared to Cyprus (three weeks versus two weeks). In the latter country, there was the prospect that one would work in the context of an EU-IMF supported programme facilitating the implementation of the resolution tools and bail-in amounts. In Greece, the set-up was far from clear.

Besides in aspects of severity, the design of both regimes differed also with respect to the subsequent speed of relaxation, treatment of foreign banks and some governance aspects.

Within one month after the introduction of the financial restrictions, the Cypriot authorities proceeded quickly by issuing ten Ministerial Decrees to ease the restrictions in little steps, as they believed that a pro-active attitude would be confidence-enhancing and would contain deposit outflows. Given the importance of the international bank activity for the Cypriot economy the authorities abolished also quickly the capital controls on off-shore transactions, as the funding of the international banks engaging in this type of business was provided from abroad and had no effect on domestic liquidity. In Greece foreign banks have a negligible market share and no special treatment was required. Greece was more prudent in the beginning and introduced only few exemptions given the still precarious situation in which the country was despite the agreement on the Third Programme in August 2015.

Graph II.1.4: **Administrative restrictions and stabilizing deposits in Greece and Cyprus**



Source: Central banks of Cyprus and Greece

Further easing was conditioned on the confidence rebuilding process. While in Greece some relaxations could go faster (Table II.1.3), in Cyprus one first had to work hard to convince depositors that bail-in would not occur again. In Greece, early termination of term deposits and opening of new accounts was eased within three months, as well as payments abroad for individuals up to EUR 500 per month, while it took more time in Cyprus.

The more prudent approach of Greece resulted in an immediate effective containment of deposit

Table II.1.3: **Capital controls in Cyprus and Greece: overview of main features**

	(between bracket easing)	**Cyprus** (- date: end of restriction)	**Greece** (- date: day of relaxation)
Timing	Context	Bail-in of uninsured deposits	Contentious 3rd programme; ECB freezes ELA
	Bank holiday	Sat 16 to Wed 27 March 2013	Sun 28 June to Sun 19 July 2015
	Start capital controls	Thu 28 March 2013	Mon 20 July 2015
	End capital controls	Mon 6 Apr 2015 (domestic: Tue 31 May 2014)	still in place
Cash	Withdrawal per day, account	EUR 300, cumulative (500 for legal persons) - 31 Mar 2014	EUR 60 EUR (840 per 2 weeks) -23 July 2016 No new prepaid cards issuance or re-loading
	Cross border per journey, person	EUR 1 000 (10 000) - 6 Apr 2015	EUR 2 000 for Greek residents
Credit cards	Payments abroad	EUR 5 000 per month, bank and person - 25 Apr 2013	Physical presence: no restrictions Electronic payments: limits per bank and product
Deposits	Opening new accounts	Forbidden (eased) - 31 May 2014	Forbidden (eased for business, students and pensioneers living abroad) - 22 July 2016
	Early termination	Forbidden except for repayment of loan in same bank - 31 Mar 2014	Forbidden except for payments within the bank (eased for debt and real estate) - 25 Sep 2015
	Mandatory roll-over	Yes, for 90% (80%) with 1 month maturity - 31 Mar 2014	No
Bank transfers w/o approval	"normal" business per transaction	Domestic: EUR 5 000 (30 0000) - 22 Nov 2013 Abroad: EUR 5 000 (2 mio; justifying documents) - 9 Jan 2015	Domestic: No restrictions Abroad: EUR 5 000 (350K, justifying documents) -7 Jan 2016
	regardless of purpose per person, bank, month	Domestic: EUR 5 000 (50K/200K for natural/ legal persons) - 31 May 2014 Abroad: EUR 5 000 (1 mio) - 6 Apr 2015	Domestic: No restrictions Abroad: Forbidden (EUR 1 000) -7 Jan 2016
Treatment of foreign banks		Exemption of international clients from 2 Aug 2013 (15-16 banks or 30% of banks assets)	Exemption of Black Sea Trade and Development Bank, EBRD and EIB - 29 Sep 2015
Governance	Strategy	Roadmap for gradual liberalisation (published 8 August 2013)	Roadmap for gradual liberalisation (published 15 May 2017)
	Control	Gradual shift from ex ante authorisation by Central Bank to possible ex post verification by banks based on justifying documents	Official Banks Transaction Approval Committee Special Subcommittees inside the banks for approving transactions
	Audit of banks' procedures	Done by Central Bank requested in 5th updated MoU (summer 2014)	Not done
	Decrees by Ministry of Finance (after consulting Central Bank)	35th on 13 Mar 2015 issued for 21 days and not prolonged (28 in total for foreign banks)	11th on 22 Jul 2016
	Monitoring Board	Established in first MoU by EC and Cyprus with ECB, IMF, ESM and EBA as observers	None, but MoU committment to consult EC, ECB, ESM and IMF
	European Commission Statement	Start: none End: none	start: 29 Jun 2015 End:

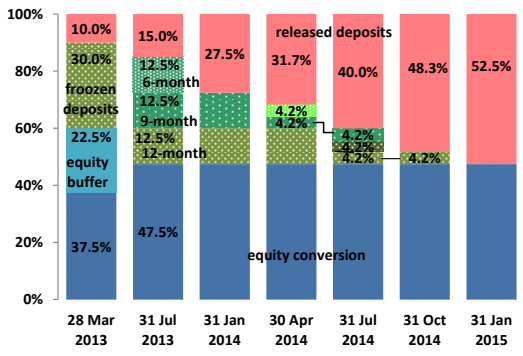
Source: European Commission

outflows to EUR 0.3 billion in the first six months after the introduction of the restrictions versus EUR 40 billion or about 25% of total deposits during the same period before the controls (Graph II.1.4). In Cyprus with EUR 3.6 billion outflows or 7.3% of total deposits after versus EUR 4.8 billion or 11% of deposits before the controls, the effect was less marked.

Special attention had to be given to the behaviour of the bailed-in depositors at Bank of Cyprus into which also Laiki Bank was resolved. Upon resolution 30% of uninsured deposits were frozen for 6, 9 or 12 months in term deposits with possibility to roll-over once and another 22.5% of uninsured deposits were blocked as equity buffer in case the initial 37.5% haircut was insufficient to recapitalise the bank (Graph II.1.5). Eventually, 10% was converted into equity and the last frozen deposit was release on 31 January 2015.

Within a year investors' confidence in both countries improved, limits on payments abroad were gradually increased and the approval of payments moved from national authorities to the banks. These favourable developments allowed Cyprus to lift all restrictions on domestic financial operations after one year and two months on 31 May 2014.

Graph II.1.5: **Uninsured deposits at Bank of Cyprus: equity conversion and gradual release of frozen deposits**



Source: European Commission

Similarly in Greece, about 12 months after the start of the controls on a positive statement of the Eurogroup in July 2016 on the implementation of the Third Programme, important relaxation measures were taken for liquidity, which came into the banking system from abroad after the controls were in place as well as for cash which could be retrieved (up to EUR 840 per two weeks). Nevertheless, Greece could not go as far as Cyprus in abolishing all domestic restrictions within the same period as Cyprus did.

Finally, concerning governance a similar approach is followed in both countries (Table II.1.3) involving extensively the international assistance partners, but Cyprus published its roadmap for the gradual re-introduction of free financial operations, while in Greece this was not the case. This milestone-based strategy helped anchor expectations and stabilising deposits (Graph II.1.4). In contrast, the Greek authorities hesitated long to publish ([1]) such roadmap fearing that depositors' expectations are dented if conditions set in the programme are not met.

In sum, the introduction of capital controls appeared unavoidable to stabilise the banking system given the financial turmoil in both countries and was instrumental in ensuring an orderly adjustment The strong commitment of Cyprus to overall programme implementation and a transparent roadmap for a return to free capital movements, including clear targets which could be checked against outturns, permitted the country to lift all controls already after two years.

([1]) The roadmap was eventually published on 15 May 2017.

2. RESTORING CAPITAL BUFFERS

2.1. CRISIS IMPACT ON BANK SOLVENCY

The liquidity problems that occurred in many EU countries, as discussed in the previous chapter, transformed over time into solvency problems. As the capital adequacy ratios were declining, sometimes below the regulatory minimum (or even becoming negative), banks were finding it hard to raise capital on the market. In numerous cases, the state had to intervene, buying shares or taking over completely the ailing institutions.

According to economic theory, the transformation of liquidity risks into solvency risks typically occurs through two basic channels: the depreciation of assets and the decline of profits. In the first case, a bank facing liquidity problems is forced to fire sale some assets, usually at a significant discount, which decreases the value of its total assets while liabilities remain the same. In consequence, the difference between assets and liabilities, i.e. the value of the bank's capital, shrinks. In the second channel, profitability of banks is negatively impacted as the liquidity shortage increases the average cost of funding. At the same time, it hampers new lending and the related income. If the crisis is systemic, the credit crunch will stifle the whole economy, often leading to a recession, a surge in unemployment and, eventually, a strain on borrowers in servicing their debts. Subsequently, the share of non-performing loans will rise in the bank loan books, for which banks will have to establish loan loss provisions. The provisions are deducted from profits and – if they are higher than profits – from capital. Apart from loans, losses may originate also from other bank exposures, in particular their securities portfolios.

The above scenarios materialised to a various extent in many Member States, especially those that suffered acute crises and received financial assistance programmes. However, in many of them other specific events exacerbated the impact of the liquidity crisis and economic recession. The bust of the property market bubble in Ireland in 2008-2009 caused an implosion of banks' balance sheets due to massive impairment of assets, leading banks into insolvency. Similarly, the banks in Greece, which struggled with the impact of the economic recession since 2009 and the shut-off from financial markets since 2010, were hit hard by the sovereign debt restructuring in early 2012. Given their significant Greek government bond portfolios, the extent of losses caused by the haircuts brought many banks into negative equity.

In order to prevent bank insolvency due to the expected impact of the adverse economic conditions, supervisors took preventive measures. They carried out stress tests aimed at forecasting future capital needs. Banks were required to frontload the estimated capital shortfalls by preventive capital increases or other measures. The stress tests carried out in the EU countries during the financial crisis featured both similarities and differences in terms of methodologies, institutional setup and the economic context. Even in the countries where the stress tests were repeated (Greece) or updated (Ireland) various aspects differed in comparison to the first exercise. The stress tests were also conducted at the EU level according to a uniform methodology in 2010, 2011 by the European Banking Authority and in 2014 by the European Banking Authority and ECB as a Comprehensive Assessment before the launching of the Single Supervisory Mechanism (European Central Bank, 2013).

Once capital needs were established, various ways for raising the capital were pursued to restore bank solvency. They ranged from the state covering fully the capital needs (e.g. Ireland in 2010-2011, Slovenia in 2014([1])) to full market subscription (e.g. Greece in 2014). In between, there were mixed schemes with the state covering the bulk of the capital needs with a minimal private sector participation (Greece in 2013, Spain in 2012) or an overall more substantial injections of private capital but limited to selected banks (Portugal in 2012, Greece in 2015). The state capital injections could come directly from the government (e.g. Ireland, partly Portugal) or indirectly, from a specially designed intermediary (e.g. the Hellenic Financial Stability Fund in Greece). Finally, a bail-in as an alternative solution for restoring bank capital buffers was carried out either only for junior bondholders (Spain in 2012 and Slovenia in 2013) or for all uninsured creditors (Cyprus in 2013).

([1]) Except from capital needs of a few small foreign owned subsidiaries.

Whereas the first section of this chapter discusses the general impact of the economic and financial crisis on solvency of EU banks, the second section presents a comparative review of selected national stress test exercises. Finally, the third section is focused on the pursued recapitalisation techniques.

2.2. STRESS TESTS

After the collapse of Lehman Brothers and the financial crisis hitting the EU, governments rescued banks in their jurisdictions through various ad-hoc measures, including recapitalisations, asset relieve schemes, guarantees and other liquidity instruments. The ad-hoc recapitalisations were done without prior stress tests, based on the needs estimated by banks. Still in 2008, the United Kingdom, Germany, Belgium, the Netherlands and France provided large capital injections for their ailing banks. Luxembourg, Austria, Denmark and Sweden also recapitalised some institutions. These capital injections were repeated in 2009 when several other countries followed suit: Ireland, Italy, Greece, Spain, Latvia and Hungary.

In a later stage of the crisis, and especially under the financial assistance programmes, bank recapitalisation was usually no longer carried out as an emergency measure but based on country-specific, specially designed stress tests. The basic idea underlying any banking sector stress test is to forecast the condition of banks within a defined period (e.g. 1 year, 3 years, 5 years, lifetime([1])) and under defined assumptions. Stress testing is used by supervisors, industry analysts and banks themselves in various contexts but mainly to assesses if the capital buffers are sufficient to absorb future losses and keep the bank above the regulatory minimum solvency ratio. In the last crisis, stress tests gained particular importance as a tool for preserving financial stability. The capital needs estimated in the stress tests were binding for the concerned banks, which had to take immediate measures to increase their buffers. The required amounts were approaching in some cases EUR 10 billion for a single institution ([2]). Still, it has to be emphasised that the stress tests results consisted of anticipated – and not incurred – losses, estimated with a significant degree of uncertainty. Both the risk of substantial underestimation and overestimation of capital needs meant great responsibility for all the involved institutions: the national authorities that endorsed the results, the international creditors that disbursed the money and, last but not least, the banks that could be nationalised or resolved.

The remainder of this section provides a comparative overview of selected national stress test carried out in the EU during the crisis: Ireland (2011), Greece (2011, 2013 and 2015), Portugal (2011), Spain (2011), Cyprus (2012) and Slovenia (2012). They are compared in terms of chronology and economic background, applied methodology and chosen recapitalisation modes.

2.2.1. Overview and chronology

The patterns of crisis unfolding and its impact on the banking sector differed among countries in many aspects, not least by the origin of problems (housing market, sovereign, general economic recession) and severity of impact:

- In Ireland, the crash on the property market caused a sharp deterioration of the quality of retail and commercial mortgage loans, bringing the average NPL ratio to peak at 23% in 2012. The scale of the 2008-2010 crisis required nationalisation and recapitalisation of the four largest banks in the country. Since 2014, the quality of the bank assets was slowly improving. The average NPL ratio fell to 17% by 2015.

- In Greece, the non-performing loans were increasing gradually in the first year of the recession; however, after introduction of the personal insolvency regime in 2010 the NPL ratio rocketed above 30% within two years. Apart from the deterioration of quality of the loan book, the banks were hit hard by losses related to sovereign debt restructuring in early 2012. The 75% haircut on the nominal value of Greek government bonds put most of the banks in negative equity, i.e. the value of their liabilities exceeded the value of their assets. Banks had to be recapitalised by the Hellenic Financial Stability Fund through a special scheme designed to incentivise private

([1]) Full maturity of bank's exposures.
([2]) [The capital needs for NBG in 2012 Greek banking sector stress test amounted to EUR 9.8 billion].

investors to remain involved in the management of the Greek banks. Due to protracted recession and political turbulence, NPLs continued to increase reaching 34% in 2015. This triggered additional stress tests and recapitalisations in 2013 and 2015.

- In Portugal, major disruption of the banking sector solvency was avoided, although banks also experienced a pressure on their capital adequacy ratios resulting from the economic recession. Some banks were recapitalised preventively according to the programme requirements. However, a major bank([1]) failed and was resolved in 2014, soon after the country's exit from the programme. The average NPL ratio was increasing continuously up to 15% in 2015.

- In Spain, a long-term credit expansion since 1990s fuelled the housing and construction bubble that burst in 2008. In the aftermath, many Spanish banks came under severe stress and scrutiny of financial markets. High level of NPLs as well as relatively low capitalisation of some of the banks, especially the savings banks, has given rise to concern. Yet, large commercial banks withstood the crisis relatively well and the average NPL for the whole banking sector peaked below 10% in 2013.

- In Slovenia, economic growth was among the highest in the euro area before the economic downturn in mid-2008. By 2013 GDP declined by more than 10%. The high indebtedness of corporate sector and the constraints on financing meant that investment recorded the largest decline, at 50%. The recession revealed also deficiencies in the banks' risk management. The bank asset quality deteriorated sharply, driven by corporate sector exposures. The average NPL peaked at 26% in 2013.

- In Cyprus, strong growth until 2008, fuelled by a property boom and buoyant lending, led to unfolding of macroeconomic and fiscal imbalances. The current account deteriorated sharply in 2008, the government deficit switched from surplus to deficit and public debt jumped from below 50% of GDP in 2008 to 87% in 2012. High private indebtedness and an oversized banking sector (700% of GDP in 2012) provided grounds for the financial crisis that was triggered by bank losses due to the haircut on Greek government bonds negotiated in 2012 combined with deteriorating asset quality. The average NPL ratio on the Cypriot portfolio increased from 25% in 2012 to close to 50% in 2014.

- In each of those countries, recapitalisation of the banking sector was based on the stress tests carried out in order to assess the capital needs. Ireland was first to launch the stress tests (Prudential Capital Assessment Review, March 2010), conducted by its central bank based on inputs from consultants (asset quality review and bottom up stress test) ahead of the financial assistance programme that started in December 2010. The Prudential Capital Assessment Review was reviewed and repeated in early 2011 under the programme. Greece followed a similar approach in the second half of 2011, in close cooperation with the Troika (European Commission, ECB and IMF) and hired consultants. The results were ready in March 2012, but their publication was delayed till December due to political turbulence. In Portugal, the central bank carried out the stress tests autonomously and regularly, without recurring to support of external consultants and with limited disclosure. In the later programmes for Spain (July 2012) and Cyprus (March 2013), the stress tests were conducted in advance([2]) and their results fed into defining the overall financing envelopes of the respective programmes. For Slovenia, the conducting of independent asset quality review and stress tests was recommended under the European Semester in 2012 and 2013 in light of the imbalances identified in the banking sector.

([1]) Banco de Espirito Santo

([2]) In Spain, it was a so-called top-down stress tests based on common assumptions for all banks. A detailed "bottom-up" stress tests for each bank, based on individual asset quality review, was completed under the programme (September 2012).

Table II.2.1: **Main features and results of asset quality review and stress test at national level**

		Ireland 2010	Greece 2011	Greece 2013	Greece 2015	Portugal 2011	Spain 2011	Cyprus 2012	Slovenia 2012
Coverage	Terms of Reference	AQR and ST	AQR and ST	AQR and ST	AQR and ST	AQR and banks' ST capacity	AQR and ST	AQR and ST	AQR and ST
	% banking assets	all	100%	100%	99.8%	top 8 banks, more than 80%	almost 90%	73%	almost 70%
	Type of banks	domestic (not cooperative)	domestic (not cooperative) and foreign	domestic (not cooperative; no foreign banks left)	domestic (not cooperative)	domestic	domestic	domestic (99%), cooperative (63%), foreign (54%)	domestic and foreign
Portfolio	Scope	all	loan book, sovereign borrowing (PSI losses)	loan book	all	loan book, commissions, fixed income, equity portfolio, sovereign borrowing	loan book, foreclosed assets, excluding foreign assets, fixed income, equity portfolio, sovereign borrowing	all	banking, trading book, assets to be transferred
	Reference date	Dec 2010	June 2011	June 2013	June 2015	June 2011	Dec 2011	June 2012	Dec 2012
Capital definition	Base	10.5% CT1	9%-10%-10% CT1 (2012-13-14)	8% CT1	9.5% CET1	9%-10% CT1 (2011-12) 7% CET (2013)	9% CT1	9% CT1	9% CT1
	Adverse	6% CT1, but higher with 2 regulatory buffers	7% CTI	5.5% CT1	8%CET 1	6% CT1 (2011-12) 5.125% CET (June 2013)	6% CT1	6% CT1, but 9% CT1 was imposed	6% CT1
	DTAs treatment	included (new DTAs unclear)	capped at 10% of CT1	capped at 20% of CT1	Existing DTA treated according to CRR, no further DTA allowed	n.a	included (but not new DTAs when public recap)	only DTAs related to Greek PSI and new DTAs (after haircut of 70%)	excluded (but results were presented with and without new DTAs)
Losses	Frontloading assumptions	based on lifetime losses	1% of outstanding loan exposure in 2014	95% (85%) of base (adverse) lifetime losses or 52% of NPLs	based on accounting rules (IAS 39)	n.a	no	based on lifetime losses	no
	bn EUR	27.7	84.6	65.8	26.0 (Systemic Banks)	0.8	270	18.5	10.4
	% of starting balance	6.1%	16.8%	15.7%	8.8%	0.2%	8.3%	18.5%	30.3%
	% change in CT1	14.2%	15.0%	8.4%	12.0% (Systemic Banks)	n.a.	3.9%	17.8%	18.1%
Capital need	bn EUR	21 (+ 3 buffer)	40.5	9.4	14.4 (SB) + 1.0 (Attica)	only 1 bank	59.3	8.9	4.8
	% of starting balance	4.6%	8.1%	2.2%	4.9% (Systemic Banks)	n.a.	1.8%	8.9%	14.0%

Source: European Commission

2.2.2. Comparison of methodologies and governance

The national stress tests undertaken in the EU countries in 2011-2012 (Table II.2.1 and II.2.2) were in all cases coordinated by a central bank, usually assisted by a consultant advising on the organisation of the process (e.g. Bain and Company in Greece in 2012, Oliver Wyman in Slovenia in 2013). The coverage of the banking sector ranged from 70% (Slovenia, Cyprus) to 100% of commercial banks (Ireland, Greece). Cooperative banks and shadow banking institutions were left out from the assessment. On the other hand, the stress test sometimes covered the capital needs of the insurance companies belonging to banking groups (e.g. Greece 2012 and 2013). The approaches differed with regard to coverage of subsidiaries of foreign banks operating in the countries undergoing stress tests: there were included in the first stress test in Greece, in Slovenia and Cyprus and excluded in Ireland, Portugal, Spain and the second stress test in Greece ([1]). On the other hand, foreign subsidiaries of banks licenced in the stress test countries were included fully (Ireland, Greece, Portugal), partially (only systemically important subsidiaries for Cyprus; subsidiaries with assets above the threshold of 5% of group assets for Slovenia) or excluded (Spain).

The Troika assisted the national authorities throughout the process in the programme countries. In Slovenia, which did not have a programme, the IMF was not involved, while in Spain the IMF had an observer status . To a lesser extent, the European Banking Authority was also involved in most of the exercises, except for Portugal and the first stress tests in Greece. Irrespective of formal arrangements (e.g. establishment of a coordination committee, a steering committee or an advisory panel), international institutions played more or less active role.

In the first stress test in Greece (2011), the Troika was closely involved with the Bank of Greece and its consultant at each step of the exercise. The results of the bottom-up stress tests conducted by the Bank of Greece were challenged by the Troika top-down model developed by the ECB, leading to the final reconciliation of estimated capital needs for every of the eighteen assessed banks.

In Portugal, the Troika was part of a Steering Committee including also representatives of the Bank of Portugal, Bank of France and Bank of Italy. The Committee received the stress test results of the Bank of Portugal for discussion and high level advice, but did not take part in the decision making during the process. The 2011 stress tests in Portugal were limited to verifying banks' capacity for stress testing their own balance sheets and did not produce estimates of capital

([1]) By 2014, there were no more foreign subsidiaries left in Greece.

Table II.2.2: **Governance of asset quality review and stress test at national level**

		Ireland 2010	Greece 2011	Greece 2013	Greece 2015	Portugal 2011	Spain 2011	Cyprus 2012	Slovenia 2012
Steering Committee	Role	No committee; consultation of programme partners	No committee; steering in programme by EC, IMF, ECB	Advisory Panel without decision making	Steering and decision	Steering and decision	Steering and decision	Steering and decision	Observers
	Participants	BoI, IMF, ECB, EC	Technical Assistance by ECB/IMF for top-down challenge	BoG (chair), EC, ECB, IMF, EBA.	SSM	BdP (chair), BdF and BdI (members), EC, IMF, ECB (represented; EBA for EC)	BdE (chair), IMF, EBA, EC, authorities	CBC (chair), authorities, EC, ECB, ESM and EBA (members), IMF(observer)	BoS (chair), EBA, ECB, EC, authorities
Involvement of consultants	AQR	Deloitte, EY, Mazars, Clayton Euro Risk Management, Situs, Arthur Cox	BlackRock	BlackRock	Oliver Wyman	PwC, E&Y	Deloitte, PwC, EY, KPMG	Deloitte	EY, Deloitte
	Bottom up ST	Black Rock	Bain & Company	Rotschild	ECB	Oliver Wyman; no formal stress test	Oliver Wyman	Pimco	Oliver Wyman
	Top-down ST		ECB	ECB	ECB	BdP	Roland Berger, Oliver Wyman, BdE	BlackRock, ECB	Roland Berger, ECB
	Real estate valuation	yes	yes	yes	yes	no	yes	yes	yes
Marcoeconomic scenario	Base	ECFIN	EC/ECB/IMF (programme)	EC/ECB/IMF (programme)	ECB	BdP (based on programme of EC/ECB/IMF)	Steering Committee, based on EC/ECB	Steering Committee, based on EC/ECB	ECFIN; BoS (credits, deposits, interest rates)
	Adverse	ECB/EBA	BoG challenged by Troika	BoG challenged by Troika	ECB	BdP	Steering Committee, based on EC/ECB	Steering Committee, based on EC/ECB	ECB; BoS (credits, deposits, interest rates)
Publication	Press release	31 Mar 2011	27 Dec 2012	6 Mar 2014	31 Oct 2015	16 Dec 2011 (AQR) 1 Mar 2012 (ST)	28 Sept 2012	19 Apr 2013	12 Dec 2013
	Report	Central Bank report (p 92)	Central Bank report (p 46+104 BlackRock)	Central Bank report (p 48+173 BlackRock)	SSM report (p 72)	no	Oliver Wyman report (p 95)	PIMCO report (p 103)	Central Bank report (p 122)
	Disclosure	bank by bank	bank by bank	bank by bank	bank by bank	only qualitative	bank by bank	bank by bank	bank by bank

Source: European Commission

buffers / shortfalls. Notwithstanding the Bank of Portugal's regular top-down stress tests of the banking system, the amounts for individual bank recapitalisation under the Programme were eventually determined in close consultation with the Troika.

In other countries, the Troika's role was falling in between the good insight in all key aspects of the stress test work and the direct decision making steering. Overtime, the Troika oversight tended to be more formal and less intrusive compared to the pioneer exercises, resulting from the increasing experience and ownership by the national central banks. In the case of 2013-14 stress test exercises in Ireland (asset quality review only) and Greece, the establishment of the Single Supervisory Mechanism (SSM) and the Comprehensive Assessment launched to prepare the take-over of supervision of the EU banking sector influenced the institutional set-up, giving more prominence to the EU institutions: the Commission, the ECB and the European Banking Authority. In the third programme stress tests in Greece in 2015, the ECB / SSM was fully in charge of the methodology and conduct of the exercise([1]) as the new supervisor while the other institutions: the Commission, the European Stability Mechanism and the IMF adopted more of a consultative role.

The stress test results were usually disclosed to the public in form of consolidated, complete reports covering the whole process of the national banking sector restructuring and recapitalisation. Those reports were prepared and published by the central banks (Ireland, Greece, Slovenia). On top of that, the summary of consultants' work (e.g. asset quality review, credit loss projections) was also published (e.g. BlackRock in Greece). Bank by bank results were sometimes included in the publications. In Spain and Cyprus, central banks published the consultants' reports only. The Bank of Portugal did not publish a dedicated report on stress testing as it did not perform a single formal stress test exercise like the other countries. In general, publishing reports on the work of independent consultants and bank by bank results can be considered a good practice in the organisation of stress tests.

2.2.2.1. *Credit loss projections*

The stress test conducted in the programme countries included several typical elements. The first step was the asset quality review: the thorough examination of bank books by specialised consultants (and their subcontractors for tasks requiring particular expertise, e.g. in commercial real estate).

The asset quality review delivered the verified account of banks' exposures, in particular with regard to their actual performance status and the adequacy of established loan loss provisions. This information provided the basis for consultants' further work on estimating the credit loss projections.

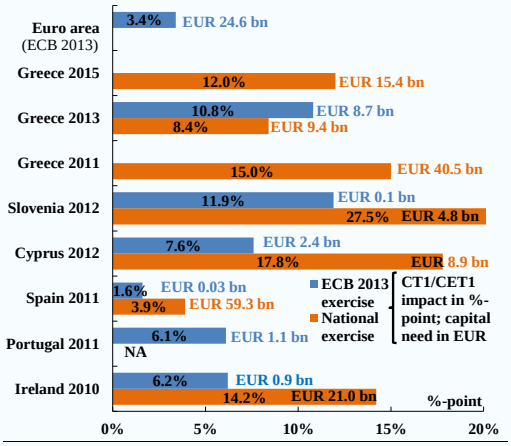
([1]) For Attica Bank, the stress test was conducted by the Bank of Greece using the SSM methodology.

Box II.2.1: National stress tests, a quantitative assessment of their quality

In the Comprehensive Assessment conducted in 2014, the ECB referred to its careful governance, extensive coverage of the banking sector, rigorous definition of capital and wide selection of the portfolios to underscore the quality of its stress tests. The severity of the stress tests is illustrated by the large capital impact reducing the CET1 ratio by 3.4 percentage points (graph 1) from 11.8% to 8.4% for the participating euro banks. In the same context also the marked worsening of the adverse scenario compared to the baseline is mentioned (graph 2). In the euro area in the 3-year baseline scenario, GDP cumulatively increased by 4.7%, while it shrunk by 2.1% in the adverse scenario, making it 6.8 percentage points worse than the baseline. It should be noted, though, that in a volatile (small) economy the discrepancy between the base line and adverse scenario would underestimate the potential deterioration of the economic situation. With respect to other variables of interest, inflation is 1.9 percentage points lower, while the unemployment rate is 1.9 percentage points higher in the adverse scenario. These two indicators (capital impact and difference between base and adverse scenario) will be used to assess the overall quality and credibility of the stress tests conducted by the Member States at the start of their external assistance programmes (Ireland, Portugal, Spain, Cyprus, Greece) or specific monitoring under the macroeconomic imbalance procedure (Slovenia). A third benchmark is added, namely a comparison between the scenario projections and reality, which is not considered for the ECB stress test as the forecasts still have to materialise. In terms of comprehensiveness and comparability, the three selected indicators appear to be the easiest available as it is difficult to catch in one metric all aspects of the quality of a stress test.

The total capital need, estimated at EUR 24.6 billion in the ECB 2013 exercise and reaching about EUR 60 billion in the Spanish 2012 exercise or EUR 65 billion from the combined 2011, 2013 and 2015 exercise in Greece, is not a good indicator that the stress tests were conducted in a severe way as the size of the banks is not taken into account (graph 1) and also the number of banks covered by the exercise can be quite different (e.g. in the case of Slovenia, 3 in the ECB exercise and 8 in the national exercise). With the stress impact on core capital ratios this drawback is overcome. Leaving aside Portugal which did not perform the same type of stress tests as the other countries, all national exercises had stress scenarios with a larger capital impact than the Comprehensive Assessment of the ECB. The severest exercise appeared to be the one undertaken by Slovenia where the adverse scenario led to a reduction in the aggregate core tier one ratio of 27.5 percentage points, followed by Cyprus with about 18 percentage points.

Graph 1: **Impact and capital need in ECB 2013 and national exercises**



Source: ECB and national central banks

The second indicator is the size of the additional shock imposed in the adverse scenario. The deterioration of the adverse scenario in the earlier national exercises in Ireland 2010, Greece 2011 and Portugal 2011, taking into account also the unfavourable starting position as given by the baseline, falls short of what the ECB imposed. In Greece 2011, e.g., the additional GDP contraction in the adverse scenario is only 3.9 percentage points compared to 8.2 percentage points with the ECB 2013, but one should be aware of the much worse starting position in 2011 compared to 2013. Similarly in Ireland 2011, the shock to GDP is weaker compared to one operated by the ECB, while the shock to unemployment is larger, but eventually the rise in unemployment is less. Presumably based on the gained experience, in the more recent national exercises the worsening introduced in the adverse scenario, appears harsher for Cyprus 2012, Slovenia 2012 and to a lesser extent also Spain 2012 and Greece 2013 and 2015 than the one used by the ECB in its country assessment (graph 2). In Cyprus 2012, e.g., GDP

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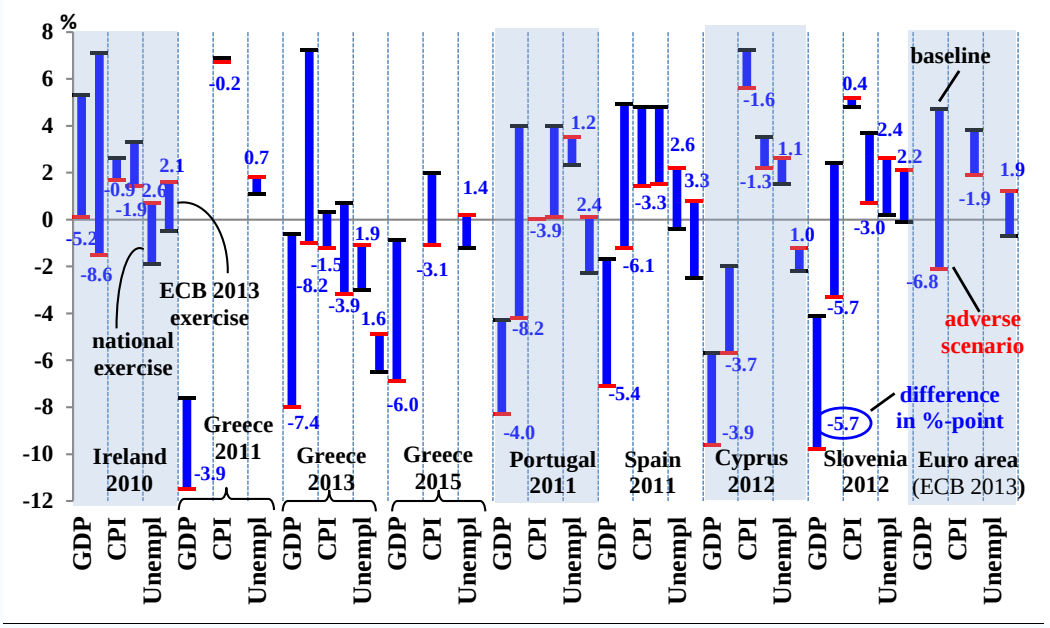
Box (continued)

Graph 2: **Cumulative difference between baseline and adverse scenario: GDP growth, inflation and change in the unemployment rate**



Source: ECB and national central banks

declined by another 3.9% in the adverse scenario on top of a contraction of 5.7% in the baseline, compared to 3.7% and 2%, respectively, with the ECB.

Finally, the severity of the scenarios can be ex post assessed by comparing the projections to the outturns, where an overestimation of growth and inflation or an underestimation of unemployment, especially in the adverse scenario, would point at a too mild stress test failing to indicate the appropriate prudent level of capital to overcome an adverse shock. The adverse scenario is indeed meant to model harsh, but unlikely events and its realisation would prima facie suggest a too soft stress scenario. The selection of outturn data to compare the projections with is tricky because of data revisions and the different starting dates of the national stress test exercises. The recent date of the various exercises does also not offer much choice. To partially overcome these issues the outturn data for a particular year have been selected from the Commission Forecasts 2 years later. Thus, the Autumn Forecasts in 2013, 2014 and 2015 provide the outturns for 2011, 2012 and 2013, whereas the Spring 2016 Forecasts give the outturns for 2014 and the following year. It should be realised that the outturns for 2015 are first estimates subject to often strong revisions.

Most baseline scenarios were too optimistic, with the exception of Slovenia, although also there inflation was weaker than foreseen (graph 3). In particular in Greece 2011 and Cyprus 2012, GDP was overestimated and unemployment underestimated, but this was also the case to a lesser extent in Ireland and Spain.

Concerning the adverse scenario, as should be, a worse picture is painted than what became the outcome with Cyprus being the exception, but this has to be seen against an already very stressed economic environment. Also in Greece 2011, the rise in unemployment was grossly underestimated. All in all, the construction of the adverse scenarios in the more recent stress tests (Greece 2013, Spain, Slovenia) appeared to have corrected some of the too mild adverse scenarios in the earlier exercises (Ireland, Portugal, Greece 2011).

In sum, using the ECB 2013 Comprehensive Assessment as a benchmark, the national stress test exercises appear equally rigorous. First, let's look at the size of the capital shock, which is probably the

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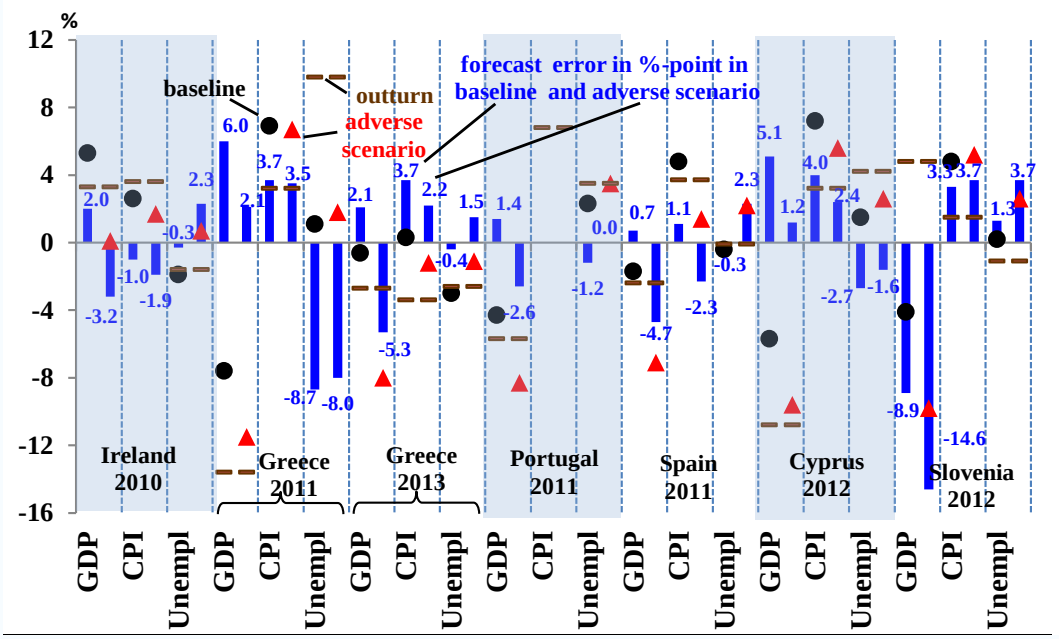
Box (continued)

Graph 3: **Cumulative forecast error in national exercises: baseline and adverse scenario**



Source: National central banks and Commission forecasts

most comprehensive quantitative measure as it takes into account the hurdle rate for the required capital level. In all countries the shock in terms of a core capital ratio is larger than in the equivalent ECB exercise. This can, however, partly be attributed to the later date of the Comprehensive Assessment when the economy started recovering. Furthermore, presumably hidden losses were recognized in the national exercises and balance sheets have been de-risked when the ECB launched its exercise with a lower potential for losses. Second, to the extent that a sufficient discrepancy between the baseline and adverse scenario is a desirable characteristic of a robust stress test, it can be noted that the earlier national exercises fell short of what the ECB did, but in the more recent exercises this is not the case. Finally, how did the scenarios compare with the outturns? The baseline was often too optimistic, but the adverse scenario was generally worse than the outturn as should be expected because the adverse scenario is supposed to model harsh but exceptional circumstances. Nevertheless, one could wonder whether in some cases the adverse scenario was, after all, not too close to reality.

Another indispensable element was the set of macro-economic assumptions. They usually constituted a set of basic macro-economic variables, such as annual changes in GDP, unemployment, inflation, disposable income and house prices. Two sets of forecasts were typically developed: a baseline scenario and an adverse scenario. The baseline scenario reflected the consensus economic forecast for the given economy, usually the one agreed by the Troika under the adjustment programme. The adverse scenario was developed under stressed assumptions, which were decided by the coordinating institution (e.g. the central bank) and the Troika. The degree of macroeconomic stress, which varied among the exercises, determined the severity of the final stress tests and impacted on the estimated capital needs (see Box II.2.1 for a quantitative analysis of the quality of the stress tests). The scenarios were developed for the defined number of years (typically 3 years, but also other periods up to 50 years called "lifetime"), depending on the framework agreed for the exercise.

Having available the results of the asset quality review and the macro-economic scenarios, the consultant could launch the credit loss projections. In this core stage of the exercise, the consultants used their proprietary models and expertise to run the estimation of future losses on the exposures selected for the exercise (i.e. domestic loan book, foreign loan book, securities portfolio etc.). Usually, the estimation relied on the *Expected Loss* (EL) model:

EL = EAD * PD * LGD,

where EAD stands for *exposure at default*, PD for *probability of default* and LGD for *loss given default*. This approach was used inter alia in the stress tests of the European Central Bank and the European Banking Authority (2011, 2012, 2014). The EAD was the input from the asset quality review. The probability of default and loss given default parameters were calibrated on the basis of the provided macroeconomic assumptions, the expertise of the consultant as well as the country-, sector- and institution-specific information acquired by the consultants in their fieldwork. For example, the main macro-economic parameters driving the probability of default in the models of BlackRock were the GDP and the unemployment change ratios, while the forecast house price evolution was the main factor influencing the loss given default levels. However, many other factors also fed in the consultant's proprietary models, which were not disclosed in detail to the overseeing institutions.

A specific issue, influencing the final capital needs, was time allocation of credit loss projections. It became apparent for example in the second stress tests in Greece in 2013. Two approaches were considered. In the time of default approach, credit loss projections were fully booked in the first year of estimated default of the exposure. In the time of realisation approach, credit loss projections were booked gradually over time until the year of estimated final liquidation of the exposure. The main argument for the time of default approach was a higher degree of conservatism in the prudential assessment. The main argument for the time of realisation approach was alignment with the real accounting practices whereby losses are booked only once they materialise and banks apply gradual provisioning for their non-performing exposures. In practice, an arbitrary decision was usually negotiated among the involved institutions to frontload a part of total "lifetime" losses into the defined stress test period.([1]).

2.2.2.2. *Internal capital generation*

The stress tests compared the credit loss projections, estimated by independent consultants against the internal capital generation measures, estimated by banks in their own business plans. The latter included mainly foreseen future profits, measures reducing risk-weighted assets (and thus capital needs), such as divestments or change of the reporting regime (e.g. from standard approach to internal risk based approach) as well as liability management exercises. The banks' estimates were conducted according to certain assumptions and restrictions (caps and floors) imposed uniformly by the coordinating institution. These could have form of special guidelines issued by the central bank, e.g. on pricing of new loans, cost of funding, credit and deposit growth, evolution of fees and commissions and trading income. The restructuring plans agreed with the European Commission (Directorate General Competition) for banks that received State aid provided additional framework of reference for a number of microeconomic parameters.

A substantial difference for capital generation capacity stemmed from the static or dynamic balance sheet assumption. The static balance sheet assumed stable levels for most items on the balance sheet, in particular loans and risk-weighted assets over the stress test period, whereas the dynamic balance sheet allowed for forecasting certain trends, e.g. of credit growth (a source of new income for banks) or deleveraging (reducing capital needs through reducing risk-weighted assets). For example, the 2013 stress test in Greece allowed for dynamic balance sheet assumptions in line with the evolution agreed in the restructuring plans agreed with the Commission. On the contrary, the 2014 European stress tests of the European Banking Authority were based on the static balance sheet assumption, which led to substantial differences of results of the two exercises.

([1]) For example, 70% in 2011 Ireland; 95% under the baseline and 85% under the adverse scenario in 2013 Greece.

Another major item was treatment of divestments. They could be allowed according to the schemes agreed in the restructuring plans. In the absence of the latter, they could be allowed with an extra degree of conservatism imposed upon bank's own, usually optimistic, forecasts, thus reducing the expected income, or disregarded completely (e.g. Greece 2011).

2.2.2.3. *Deferred tax assets*

Asset quality reviews and stress tests also had a special focus on deferred tax assets. Temporary difference deferred tax assets are a result of the deferred tax deductibility of losses recorded typically on non-performing loans or other assets, which creates a temporary difference between banks' accounting profit (which includes the loan losses of the year in full) and taxable profit (which reflects only part of the loan losses in the current year).

In a numerical example, if a bank made provisions of EUR 100 for non-performing loans and its profit before provision deduction is EUR 200, the bank may not be allowed to deduct the full amount of provisions according to the national tax laws. If e.g. only EUR 10 can be deducted (assuming 10 years for the tax deductibility of provisions), there is a need to pay tax of 190 times the corporate tax rate (e.g. 20%) or EUR 38. The unused provisions, to the extent that they offer the possibility to reduce tax payments in the future, are an asset. In this case deferred tax assets of EUR 18 are created (remaining provisions of EUR 90 times the corporate tax rate of 20%). This EUR 18 can be recouped when the remaining provisions of EUR 90 become deductible. The recoupment is complete and immediate if the bank has enough taxable profits and is not bound by the cap on provisions that can be deducted. Otherwise the recoupment is progressive over the next few years or if the bank does not have sufficient profits the deferred tax assets may be lost.

When banks realise negative taxable income, loss carry forward deferred tax assets are created which represent the possibility to reduce taxable income in the future and thus to reduce the tax bill. The use of loss carry forward deferred tax assets is usually limited to a certain number of years in accordance with the national tax system. Assuming that the bank made a loss of EUR 30, the possibility to recoup this in the following e.g. 5 years is reflected in the creation now of EUR 6 deferred tax assets (EUR 30*e.g.20% tax rate). Its effective use is condition on the realisation of EUR 30 profits in the next 5 years or tax obligations of EUR 6. If the bank does not realise enough tax profit to reach this tax obligation, the loss carry forward deferred tax assets are lost.

However according to the Capital Requirement Regulation, deferred tax assets that rely on future profitability of banks are to be deducted from the own funds starting from 2014: i) deferred tax assets for losses carried forward are fully deducted from common equity tier1 capital with a transitional period, allowing for a phasing in of the deduction. ii) deferred tax assets from temporary differences are deducted if and to the extent they exceed 10% of common equity tier1 capital (or 15% together with any other specific deduction from common equity tier1. A 250% risk weight is attributed to deferred tax assets that remain below the combined threshold.

Table II.2.3: **Guaranteed deferred tax assets in Portugal, Greece, Italy and Spain**

(15 March 2015)	EUR bn	% in capital
Portugal	3.0	23
Greece	12.8	46
Italy	34.6	22
Spain	38.3	18

Source: ECB

The reason of the deduction as decided by the Basel 3 accord is that deferred tax assets are seen as assets that are uncertain and their value can especially fall in times of crises when the banks needs the most a reliable and strong capital base. Their inclusion in the capital calculation of banks hence distorts the picture of banks' reliable capital base.

Furthermore the estimated profitability of banks under the stress test set a ceiling on how much accounting deferred tax assets banks can reasonably assume to have to which those created based on the asset quality review have to be added reflecting the request by supervisors to make additional provisions. As the deduction of deferred tax assets from core tier1 or later common equity tier1 capital would have created much larger capital needs for certain banks, some countries

(Italy, Spain, Portugal and Greece) decided to grant a state guarantee on the deferred tax assets (which is often referred to as deferred tax credits or DTCs). According to the Capital Requirements Regulation, deferred tax assets from temporary differences that do not rely on future profitability (deferred tax credits) are not deducted from common equity tier1 capital and are only risk-weighted at 100%.

The guarantee for which banks pay a fee to the state is triggered when the bank is liquidated, while in this case the deferred tax assets would have been useless, or when banks generate losses in a given year which need to be covered (impossible with deferred tax assets requiring profits to be usable).

Even before the Capital Requirements Regulation introduced the phase in of the deferred tax assets rule, some of the national stress tests had already limited the deferred tax assets that could be taken into account as part of the capital assessment. In Greece the 2011 exercise capped the acceptable deferred tax assets at 10% of core tier1 capital. In Spain in the 2011 asset quality review and stress test, new deferred tax assets were not allowed for entities that had experienced a public sector intervention by Dec 2011. In the 2012 Cypriot exercise, existing deferred tax assets related to losses on Greek PSIs and 30% of new deferred tax assets were taken on board while in Slovenia deferred tax assets were excluded fully in 2012.

In the Greek banks the largest part of deferred tax assets were originally the result of the restructuring of the Greek bonds in 2011 and 2012 under the Private Sector Involvement (PSI), but later years the high provisioning on NPLs contributed to a significant extent (Table II.2.3).

2.2.2.4. Estimation of capital needs

Having available the estimates of future losses (credit loss projections) and profits (internal capital generation measures), assumed evolution of risk-weighted assets and starting levels of capital and provisions (from the asset quality review), one could calculate the banks' capital needs for the defined period. In order to accomplish this task, however, one final essential parameter was needed: the hurdle rate, i.e. the capital adequacy level defined as the minimum for the given scenario (baseline or adverse). Linked with this, was the adopted definition of regulatory capital (e.g. core tier1 or common equity tier1).

The hurdle rates were defined in terms of minimum regulatory capital adequacy ratio. They could be set at different levels for each year of the stress test period (e.g. Greece 2011, Portugal). The threshold for the baseline scenario, which was assumed to be the central scenario, was typically set at 9%, although it ranged from 7% (Portugal) to 10.5% (Ireland). For the adverse scenario, the threshold was set at a lower level, typically 6%, ranging from 5.1% to 7%. The lower level is explained by the low probability of the adverse scenario that was designed as a tail event, hence the assumed capital level should merely allow banks to "survive" the economic shock in the short term.

The definition of regulatory capital had fundamental meaning for banks, as it was stipulating which financial instruments they could use to meet their capital needs. Depending on the definition, various proportions of common equity, preference shares, convertible bonds (CoCos) or deferred tax assets were accepted. In the first stress test exercises (Ireland, Greece, Portugal), the Core Tier1 capital definition according to Basel II rules was used (EBA definition). It was subsequently replaced by the common equity tier1 definition as the Capital Requirement Directive IV and Regulation entered into force across the EU implementing the Basel III rules. In some cases (e.g. Greece 2013) transitory definitions were sought.

As the baseline and the adverse scenarios generated two different estimates of capital needs, a decision had to be taken which estimates would be binding on banks. Various approaches were pursued in this regard. For example, in the 2010-2011 stress tests in Ireland, it was the adverse scenario. With the results of the Greece 2011 stress tests, always the higher of estimates from both scenarios was binding (which usually was the one from the adverse scenario, except for two banks). Two years later in Greece, however, the baseline scenario was deemed binding, while the adverse scenario was to be taken into account for future capital buffers.

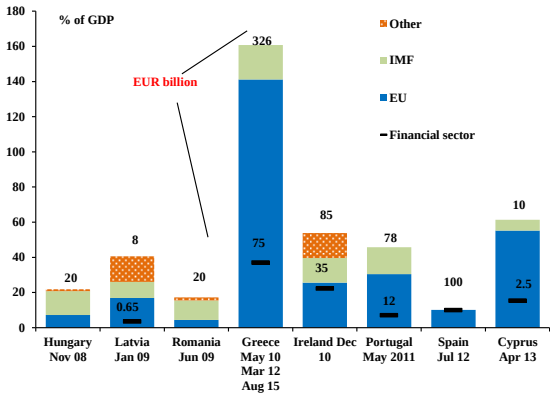
In order to achieve an extra degree of conservatism in the assessment of capital needs specific additional constraints could be imposed. For example, banks were required to hold additional loan loss provisions at the end of the stress test period, on top of credit loss projections estimated by the consultants (e.g Greece 2011 and 2013). Banks were also required to hold some provisions for their new loan production during the assessment period. These additional requirements were translating directly into higher capital needs. Other adjustments or prudential filters aimed at increasing the severity of the stress tests included caps or floors on income or expense items in banks' own estimates of operating profits; exclusion of certain categories of income (e.g. trading income) or moderation of evolution of risk-weighted assets forecasted by bank, for example due to overly optimistic assumptions as to the result of planned divestments or achievement deleveraging targets, discussed in the previous section.

2.3. CAPITAL RAISING

2.3.1. Size of public aid package and impact on debt

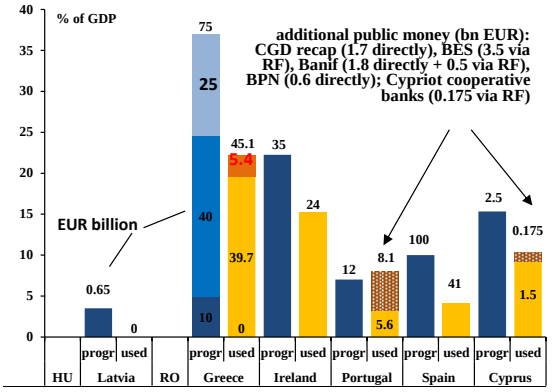
With the exception of Hungary and Romania, all programmes included funding for the financial sector, ranging from 8% (Latvia) to 100% (Spain) of the total envelope (Graph II.2.1). These financial sector envelopes were estimated with conservative assumptions and the effective use of these funds did not exceed 70% of the available envelope (Graph II.2.2). The availability of a buffer in case of further needs was deemed critical to restore confidence and stability in the financial sector. It has to be noted, however, that in the case of Portugal, some interventions in the banking sector occurred outside the programme envelope, significantly increasing the weight for public finances. Admittedly, a large part of this support took the form of an advance of the Treasury to the resolution fund which has to repay the loan via the contributions of the banks to the resolution fund. The same happened in Cyprus, but on a smaller scale.

Graph II.2.1: **Programme funding for the banking sector in the total envelope**



Source: European Commission

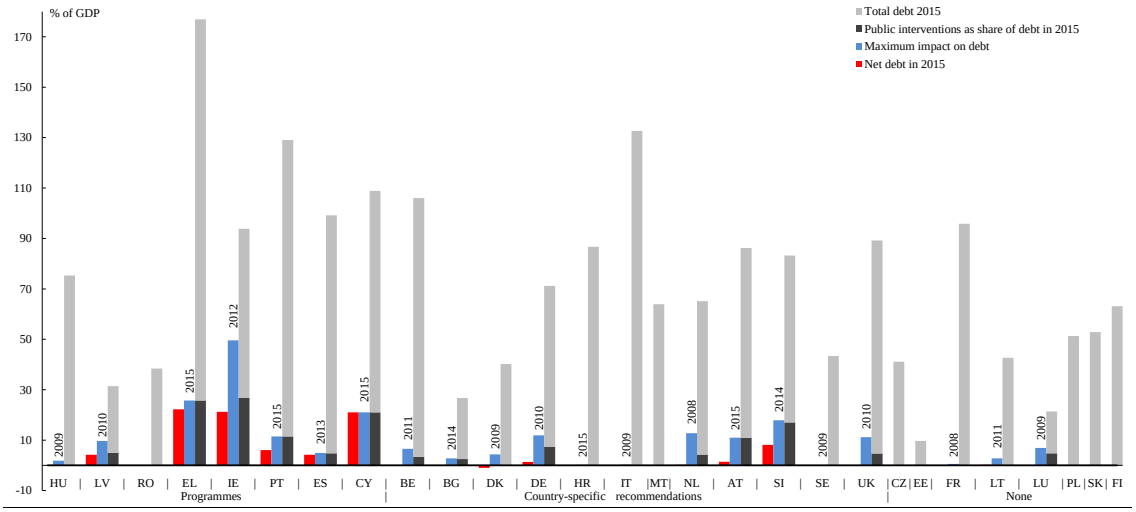
Graph II.2.2: **Foreseen and used public funding in the banking sector**



Source: European Commission

In 2015, the impact of government interventions to support financial institutions during the crisis was still inflating public debt of most EU countries (Graph II.2.3). For the EU as whole, the impact stands at 4.3% of GDP down from a maximum of 5.8% reached in 2012. This decrease stems from the progressive sale of the assets (typically shares) acquired by the government during the crisis as a mean to support financial institutions. For several countries this still represents more than 10% of public debt in 2015: Greece (14.5%), Ireland (28.5%), Cyprus (19.3%), Germany (10.4%), Austria, (12.8%), Slovenia (20.4%), as well Latvia (13.6%) and Luxembourg (22.4%), but in the latter two countries overall public debt remains moderate.

Graph II.2.3: **Impact of government interventions to support financial institutions on public debt**



Source: Eurostat

An estimate of the permanent effect of the government's intervention during the crisis is the net debt (liabilities minus the current valuation of assets held). While most countries face a temporary impact in their public debt, a significant impact is likely (i.e. net debt is significantly positive) only in a few number of countries: Greece, Ireland, Cyprus, Slovenia, Portugal, Latvia and Spain. This is mostly the result of large capital injections to cover past losses.

2.3.2. State aid

State interventions have differed in terms of intermediary institution, sources of funding, financial instrument and conditionality.

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). In Portugal, an intermediate solution was implemented with the Bank Solvency Support Facility (BSSF). It mainly consists in a dedicated budgetary line, without specific governance or employees. It received EUR 12 billion from the financial assistance provided of which EUR 5.6 billion was used during the programme while for the recapitalisation of the state owned CGD in 2012 a direct capital increase by the state (EUR 1.7 billion) was chosen outside the Bank Solvency Support Facility.

The sources of the funding also differed across countries, from purely national resources (Slovenia, partly Portugal) to European assistance, either through the European Financial Stability Facility Fund (Spain, Portugal, Greece) or European Stability Mechanism (Cyprus and Greece).

While in some countries public sources came in via a direct capital injection by the State (e.g. Slovenia, Spain, Greece, Portugal, Cyprus), in others most of the public capital injections were in the form of CoCos, bearing high interest rates (e.g. Portugal, Greece, Slovenia). In some cases, specific requirements (on top of those stemming from State aid rules or the Bank Recovery and Resolution Directive) were attached to the public intervention: in Greece in 2013, Banks were required to raise at least 10% of the capital needs from private sources in order to avoid full

Table II.2.4: **Overview of burden sharing**

	Cyprus		Greece		Ireland		Portugal		Slovenia	
	EUR bn	%	EUR bn	%	EUR bn	%	EUR bn	%	EUR bn	%
capital needs and losses	21.1	100	73.4	100	137.4	100	42.6	100	6.4	100
private owners	8.7	41.3	40.6	55.2	58.5	42.6	17.3	40.6	0.6	9.4
public sources	3.3	15.6	29.9	40.7	63.9	46.5	22.6	53.0	5.3	82.7
bail-in	9.1	43.1	3.0	4.1	15.0	10.9	2.7	6.4	0.5	7.9
of which: jr debt	1.2	5.7	0.7	1.0	15.0	10.9	2.7	6.4	0.5	7.9
sr debt and deposits	7.9	37.4	2.3	3.1	0.0	0.0	0.0	0.0	0.0	0.0

Note: The events covered are for Cyprus (06/2012 - 08/2013), Greece (06/2013 - 11/2015), Ireland (03/2009 - 12/2011), Portugal (07/2012 -

Note: Only events were taken into account were public money was used and/or bail-in took place. The events covered are for Cyprus (06/2012 - 08/2013), Greece (06/2013 - 11/2015), Ireland (03/2009 - 12/2011), Portugal (07/2012 - 1 2/2015), Slovenia (12/2013 - 10/2014), Spain (12/2012 - 02/2013). The losses to equity holders is approximated by the maximum book value of three years prior to the event.
Source: European Commission

nationalisation and were subject to tougher oversight by the Hellenic Financial Stability Fund.

In Spain, Portugal, Slovenia, Cyprus and Greece, public funding reached on average 6.3% of GDP, with the latter two being the clear outliers with 18% and 17% respectively as in these countries almost the entire banking sector was affected by recapitalisation needs.

2.3.3. Burden sharing

Some banks managed to recapitalize fully through private means to address capital shortfalls identified in the country specific stress test conducted in the programme countries and Slovenia. In general, public support and, even more so, bail-in of debt holders was tried to be avoided.

The burden sharing of subordinated debt and even senior debt has been applied in several euro area countries, in particular following the Communication from the Commission of 2013 which strengthened the burden sharing requirements. In Ireland, Spain, Portugal, Slovenia, Cyprus and Greece the capital generated from bail-in amounted to EUR 43.8 billion during their respective crisis years. However, the bail-in covered on aggregate only about 12% of the total costs, while ranging from 4% to 43%. The main part of the costs were covered on aggregate by public assistance of EUR 164 billion (45%) and by those invested in the equity of the banks (EUR 157 billion; 43%).

For assessing the whole attribution of losses of banks, those allocated to the shareholders of the banks is difficult to quantify. Burden sharing was ensured under State aid rules through e.g. a ban on dividends, coupon payments and buy backs, which adds to the usually extreme fall in the equity value for the shareholders. If we assume that the highest book value of the supported institution in the past three years prior to the intervention was fully lost for the shareholders we have an approximation which would show that shareholders took 37% to 55% of the total bill of the ailing institutions reviewed.

Based on recapitalisations of credit institutions where public assistance was deemed necessary and/or bail-in applied (Table II.2.4), the biggest costs were to cover in Irish institutions (EUR 137 billion) with an allocation of these costs similar to the aggregate of the countries assessed (see last column in Table II.2.4). Cyprus stands out with the highest share of bail-in (43%) which equalled 50% of GDP, while bail-in did not reach 2% of GDP for most of the other countries.

In terms of magnitude, the largest bail-in of subordinated debt so far took place in Ireland (EUR 15 billion) and Spain (EUR 13.5 billion). In the latter, the burden-sharing exercise was complemented with a compensation mechanism for clients subject to mis-selling (about EUR 3 billion).

Slovenia afforded the highest share of public sources (83%) but was simultaneously also the owner of the key banks affected, while bail-in was

among the lowest and also challenged ([1]). In Greece the shareholders were hit the most (55%). Reasons for differing outcomes lie also in the varying type and size of the banking sector problems and the availability of public funding. In Greece and Cyprus, almost the entire banking system was affected, while in Slovenia half of the sector and in Ireland about 40% was concerned. The market share of the affected banks in Spain was below 20%.

2.3.4. Bail-in in Cyprus

Bail-in of senior creditors was applied by the Cypriot authorities as a new policy tool for absorption of bank losses even before the entry into force of the Bank Recovery and Resolution Directive, which has regularised its use since January 2016. Before only junior debt was required to be bailed-in as was done, e.g. in Spain in mid-2013, as formalised in the Banking Communication of 1 August 2013. Given the large capital shortfall at Cypriot banks, as estimated by the intermediary report by PIMCO from mid-December 2012, it became increasingly evident that domestic politicians could not count on a complete international bail-out of both Cyprus public finances and private bank losses.

An initial political agreement, reached at the Eurogroup meeting from 15 and 16 March 2013, endorsed a proposal from the Cypriot authorities to introduce a tax on all bank depositors, insured and uninsured alike, in all Cypriot banks. It was projected that EUR 5.8 billion would be collected, through the imposition of a 9.9% levy on all uninsured deposits, estimated at EUR 40 billion, and a 6.75% levy on the insured deposits, estimated at EUR 27 billion. An exemption to deposits below EUR 20 000 was granted later. The proceeds were meant to be used for liquidating some of the banks and for recapitalising the rest. The measure was presented as a banal tax instrument, namely as a 100% withholding tax on interest income to be received in the following two to three years against the background of the high deposit interest rates of 3.5% and more in Cyprus at that time. This initial plan was given up, as it was considered not compatible with the very notion of guaranteed deposits up to EUR 100 000. Eventually, it failed to receive parliamentary support in Cyprus and had to be withdrawn.

The second political agreement, reached at the Eurogroup meeting from 25 and 26 March 2013, endorsed the decision of the Cypriot authorities to restructure its financial sector. Cyprus proceeded with a bail-in of the creditors of the Cyprus Popular Bank and Bank of Cyprus. Cyprus Popular Bank was resolved and split into a legacy unit and a healthier unit. The legacy unit included limited assets, mainly stakes in foreign subsidiaries and a compensatory equity stake in Bank of Cyprus. It was funded by all uninsured deposits and was put into special administration. The healthier unit assumed the remaining assets and liabilities and was integrated into the Bank of Cyprus. Overall, EUR 9.1 billion, i.e. more than 50% of Cyprus GDP, were bailed-in. At Cyprus Popular Bank, the burden of EUR 4.9 billion was distributed between holders of senior debt (EUR 0.1 billion), holders of subordinated debt (EUR 0.8 billion) and uninsured depositors for EUR 4.0 billion. The final bail-in numbers for Bank of Cyprus creditors were determined only at the end of July 2013. Thus, of all uninsured deposits, 47% were converted into equity, three tranches of 12.5% each were converted into 12-, 9-, and 6-month time deposits respectively and the remaining 15% were fully released. The overall burden of EUR 4.0 billion bailed in at the Bank of Cyprus was distributed between EUR 0.1 billion of subordinated debt and EUR 3.9 billion of deposits. Finally, Hellenic Bank also managed to complete a voluntary liabilities management exercise that bailed-in EUR 300 million of subordinated debt.

In order to mitigate financial stability concerns following the bail-in of depositors, a bank holiday was imposed by the Central Bank of Cyprus, together with capital controls and restrictions limiting cash withdrawals to EUR 300 per day.

As a result of the bail-in, the capital structure of the Bank of Cyprus was transformed profoundly. After the bail-in, former shareholders held less

([1]) Following a question by the Slovenian Constitutional Court, the European Court of Justice judged on 19 July 2016 as valid (press release No 80/16) the European Commission Banking Communication of 13 July 2013 on burden sharing with subordinated debt. Supported by this verdict the Slovenian Constitutional Court ruled on 27 October 2016 that the bail-in did not infringe the right to private property, the prohibition of retroactive effect or the principle of legitimate expectation (press release U-I-295/13-263 and a reaction in English by the central bank: press release 28.10.2016).

than 1% of the capital, while former uninsured depositors held 81% of the capital. The remaining 18% were held by Cyprus Popular Bank (in special administration), who received the Bank of Cyprus shares in exchange for the transfer of the healthier entity in which the bank was split. These shareholdings were further diluted in September 2014 due to a necessary capital increase by EUR 1 billion.

Cyprus' experience with the bail-in of uninsured depositors is complex. First, this policy option could be implemented relatively quickly by the Cypriot authorities and close a major capital shortfall at a bank. Second, the measure caused economic hardship for the depositors affected and, given the extent of the measure, there were spill-overs to society as a whole. It may have exacerbated also the rise of non-performing loans in the wake of uncertainty about the safety of bank deposits. Third, the measure affected a large segment of the banking system and financial stability safe-guards were necessary to ensure that deposit outflows were prevented and liquidity problems not transmitted to other institutions. The introduction of capital controls impacted on economic activity and weighed on economic growth. Fourth, as suggested by the success of the subsequent private capital raising plans at Bank of Cyprus, the bail-in did not trigger a reputational issue beyond the immediate short term. Thus, the bail-in of bank senior creditors in Cyprus contributed to restoring capital buffers and financial stability, but was individually painful ([1]) and had a negative impact on the economy at large. The question remains open to what extent this experience can be generalised as a large part of the bailed-in creditors were non-EU residents and pressure on funding remained muted, beyond the short-term, thanks to the overall availability of liquidity.

([1]) The bail-in has been challenged in several cases before the European Court of Justice. In the case Ledra Advertising versus Commission and ECB, the Court in its judgement on 20 September 2016 (press release No 102/16) dismissed the allegations of violating fundamental property rights and refuted requests for compensation.

3. BANK RESTRUCTURING AND CONSOLIDATION

Placing credit institutions on a sound footing following either individual or systemic financial turbulences is a complex and pressing task. The banking sector is intrinsically vulnerable to contagion because of the fractional reserve system in which only part of the sight deposits are covered by high-powered money as well as through the interconnections which exist via the interbank wholesale funding market. Significant action has been taken since the start of the crisis to address the financial sector's difficulties. Banks with temporary problems and deemed viable, had to restructure. For banks whose viability cannot be enhanced via a streamlining of their operating model, the most drastic alternative, i.e. liquidation, had to be imposed. These measures led to downsizing of the financial sector and often to consolidation with other banks.

Reflecting the various circumstances in both the structure and soundness of the financial sector, as well as the capacity of the state to support its banking system, the approaches of the Member States to the financial crisis differed. Furthermore, the responses evolved over time as the evolution of the crisis has required the adaptation of certain provisions of the State aid framework dealing with the rescue and restructuring of institutions in difficulty. Also the supervisory environment had to be adjusted to cope with the current complexities of banking sectors operating cross border. In its response to the financial crisis, the restoration of financial stability has been the overarching objective for the Commission, whilst ensuring that State aid and distortions of competition between banks and across Member States are kept to the minimum.

In order to document these issues, the present chapter starts by putting restructuring and liquidation into perspective and then zooms in on crisis and reform of some specific banking structures. The second section compares the approach to the German and Spanish savings banks. The solutions formulated to the problems of the cooperative banks in various countries are discussed in section three and how public banks are dealt with in section four.

3.1. RESTRUCTURING AND LIQUIDATION IN PERSPECTIVE

The importance of restructuring and liquidation in the Member States is looked at from various angles. There was sizeable public intervention in the banking sector not only in the context of externally supported programmes, but also outside when the national public finances permitted it. The role of the country-specific recommendations is highlighted and to what extent the size of the financial shock affects the trade-off between restructuring and liquidation. Finally, the question is addressed to what extent the ensuing downscaling of the banking sector has led to a reduction of foreign banks and consolidation in the national banking markets.

3.1.1. Outside programme context with country-specific recommendations following

The financial turbulence around the collapse of Lehman Brothers on 15 September 2008 led to significant problems in the EU. Where the national authorities had the financial strength to support their ailing banks, they did so. This was the case in Belgium and the Netherlands with respectively somewhat more or a little less than 75% of the banking sector (300% of GDP) needing public support (Graph II.3.1). Fortis collapsed over its failed attempt, together with Royal Bank of Scotland and Banco Santander, to buy ABN-AMRO and was first rescued by the Belgian state to be sold immediately to French BNP Paribas as the bank would be too big a burden for public finances. KBC was rescued by a joint effort of the federal and regional governments, while Dexia was resolved with Belfius being the "good bank" in public hands (Table II.3.1).

Even bigger banks were affected in Germany and the United Kingdom, but given the dimension of their banking system, the relative share of total bank assets concerned was smaller, around 35-40% (still close to 200% of GDP for the United Kingdom). Besides the savings banks to which a separate section is dedicated, Commerzbank was a most high profile case. This German bank had to drastically divest from its volatile investment banking and commercial real estate activities and focus on its core retail and corporate business. In

Box II.3.1: **Clarifying the State aid rules in light of the financial crisis**

The Commission explained its approach by means of Communications of which the following five are of particular importance (DG Competition - European Commission, 2011b, p 10 on which this box is based). The Banking Communication of 13 October 2008 was the first and gave guidance on the application of State aid rules to public support schemes and individual assistance for financial institutions. Key elements for authorising state aid are non-discrimination, limited in time and scope, appropriately remunerated and the receiving bank should adjust its business model and as well as abstain from abusing the state support to aggressively expand. Going beyond the individual bank, the need was emphasised for structural measures for the whole financial sector.

These principles were further elaborated in the Recapitalisation Communication of 5 December 2008. In this Communication, the Commission developed more detailed remuneration criteria which would allow it to declare State aid compatible with the internal market. Furthermore, safeguards are built in to ensure that the public capital is used to sustain lending to the real economy and not to finance aggressive commercial conduct to the detriment of competitors who manage without state aid.

Thirdly, the Impaired Asset Communication of 25 February 2009 tackled the root causes of the crisis in the form of impaired assets on banks' balance sheets by providing guidance for aid linked to relieving banks from these assets. The purpose is to make sure that foreseeable losses are disclosed and properly handled and banks can use their capital to resume their normal function of lending to the economy instead of fearing they would need this capital to cushion against possible losses. Methodologies are provided for the valuation of impaired assets and the necessary remuneration of the State for the asset relief.

The Restructuring Communication of 19 August 2009 sets out in more detail the conditions as to when banks need to submit a restructuring plan and what measures should be included (A. Bomhoff, A. Jarosz-Friis and N. Pesaresi, 2009). In particular, banks must stress test their activities and demonstrate strategies to remedy unsustainable business models and achieve long-term viability without State support under adverse economic conditions.

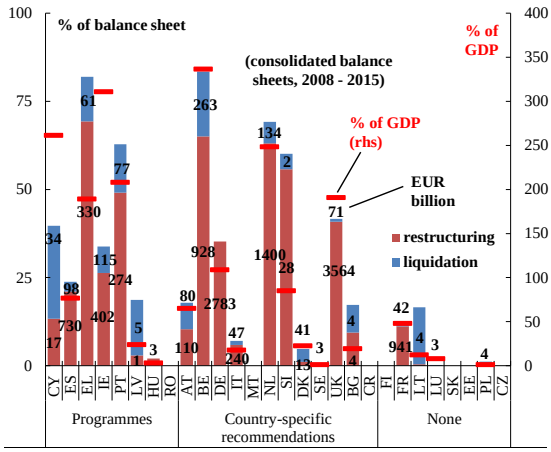
The fifth Communication of 30 July 2013 stressed the importance of a sound plan for restructuring or orderly winding down before banks can benefit from recapitalisations or asset protection measures. Burden-sharing requirements were strengthened obliging shareholders and junior creditors to contribute first, before banks can ask for public funding. State aided banks should also apply strict executive remuneration policies with a cap on total remuneration in order to give management the proper incentives to implement the restructuring plan and repay the aid.

the United Kingdom, Northern Rock was not the biggest affected bank, but it was the first in the recent financial crisis to be subject to a deposit run and the queues before the bank sent shock waves through financial markets. Lloyds Banking Group and Royal Bank of Scotland are among the biggest EU banks that needed public recapitalisation (Table II.3.1) and latter benefitted also of an asset protection scheme.

Austria and Italy were other countries where relevant banks needed help. The downturn in Eastern Europe affected in particular Austria, leading to the resolution of Hypo Alpe Adria weighing heavily on the state budget of the province of Carinthia that provided guarantees on financing instruments issued by the bank. The oldest bank in the world, Monte dei Paschi di Siena received a public capital injection following losses on hidden derivative contracts. End-2015, Italy had to resolve four smaller banks (Banca delle Marche, Banca Popolare dell'Etruria e del Lazio, Cassa di Risparmio di Ferrara, Cassa di Risparmio della Provincia di Chieti). Besides

shareholders, the burden sharing remained limited to the bail-in of junior debt, which was severely contested because of alleged mis-selling to financially illiterate retail investors. A Solidarity Fund financed by the whole sector was set up to compensate those retail bondholders whom had been victims of misselling.

Graph II.3.1: **Liquidation and restructuring in the banking sector of the Member States with State aid**



Source: European Commission

These public interventions took place against the evolving State aid rules which were adapted to cope with the economic and financial crisis which has taken a systemic dimension and required a reformulation of the balance between maintaining financial stability, burden sharing and fair competition (see Box II.3.1).

When the EU surveillance mechanism was reformed in 2010 with the introduction of the EU Semester, several of these public rescue operations, were followed up by issuing country-specific recommendations (Austria in 2012-14, Belgium in 2011, Germany in 2011-14). While a significant part of the banking system in the United Kingdom needed public assistance, the country-specific recommendations concerned other issues.

3.1.2. Outside programme context with country-specific recommendations leading

In several countries, recommendations were issued more timely based on the revamped EU surveillance framework. Slovenia received in 2012-13 the request to perform an asset quality review and stress test against the background of a boom/bust cycle in the real estate sector and governance issues linked to the heavy involvement of the state in banking and some enterprises (Georgieva and Riquelme, 2013). It led to the uncovering of some capital holes and to state intervention concerning 60% of the aggregate bank balance sheet (Graph II.3.1). Some smaller banks (Factor Banka, Probanka) were wound down (Table II.3.1), while Nova Ljubljanska Banka, to a large extent owned by the state, Nova KBM and Abanka were restructured.

In Croatia, a Portfolio Screening Exercise for the smaller banks complemented the 2014 European Central Bank's asset quality review and stress test, but the limited additional impairments did not require public support.

After a bank run in Bulgaria leading to the liquidation of Corporate Commercial Bank following an in-depth audit and the restructuring of First Investment Bank, together representing close to 20% of bank assets, with the involvement of the public authorities, the 2015 country-specific recommendations addressed the issue of the robustness of the remainder of the banking system.

3.1.3. Programme countries outside the euro area

Concerning the programme countries, a big difference can be noted between those belonging to the euro area and those outside when receiving the external assistance ([1]). No banks had to be rescued with public money in Romania, to a limited extent in Hungary (FHB Mortgage Bank) and also in Latvia the financial involvement of the authorities remained confined to about 20% of the aggregate balance sheet of the banking sector. In the latter country, Parex Banka was resolved with Citadele Banka continuing to survive as the "good bank". The large foreign ownership of banks in these countries explains the reduced need for public intervention as the parent banks, very often relatively strong international groups, could take care.

([1]) During the 3-year external assistance programme up to January 2012, Latvia was not part of the euro area which it joined on 1 January 2014

Table II.3.1: **Size of the banks affected by liquidation and restructuring with State aid in Member States, 2008-2015**

(billion EUR except otherwise indicated)			Liqui-dation	Restruc-turing	Total
Cyprus					
Cyprus Popular Bank		2011	33.8		
Cooperative Group		2012		17.1	
total balance sheet	128.1	2012	33.8	17.1	50.9
% of total balance sheet	100.0		26.4	13.3	39.7
% of GDP	658.1		173.4	87.8	261.2
Spain					
Caja Castilla La Mancha		2009		25.0	
Caja Sur		2010		17.6	
Unnim Banc		2011		29.0	
CEISS		2010		45.7	
Caja3		2012		20.5	
SGR		2012		1.2	
Banco de Valencia		2011	22.5		
Banco Gallego		2012	4.3		
Banco Mare Nostrum		2010		72.0	
Bandia		2011		312.3	
Caja de Ahorros del Mediterraneo		2011	70.8		
Catalunya Banc		2010		81.0	
Liberbank		2011		50.7	
NCG Banco		2011		75.0	
total balance sheet	3471.0	2010	97.6	730.1	827.7
% of total balance sheet	100.0		2.8	21.0	23.8
% of GDP	321.1		9.0	67.5	76.6
Greece					
Agricultural Bank of Greece		2010	31.2		
T Bank		2011	2.5		
Alpha Bank		2010		67.0	
Eurobank		2010		87.2	
National Bank of Greece		2010		120.7	
Pireaus Bank		2011		55.6	
Proton Bank		2010	4.3		
TT Hellenic Postbank		2011	18.0		
Cooperative banks		2013	0.5		
First Business Bank		2012	0.5		
Probank		2013	3.5		
Total balance sheet	476.9	2011	60.5	330.5	391.0
% of total balance sheet	100.0		12.7	69.3	82.0
% of GDP	230.4		29.2	159.6	188.9
Ireland					
Allied Irish Banks		2010		165.2	
Bank of Ireland		2009		200.0	
Anglo Irish Bank Resolution Corporation		2009	102.1		
Permanent TSB Group Holdings				36.3	
Credit Unions		2011	12.5		
total balance sheet	1527.0	2010	114.6	401.5	516.1
% of total balance sheet	100.0		7.5	26.3	33.8
% of GDP	919.0		69.0	241.6	310.6
Portugal					
Banco Privado Português		2008		2.9	
Banco Português de Investimento		2012		37.9	
Banco Comerical Português		2012		89.7	
Banco Português de Negócios		2008		6.6	
Banco Espirito Santo		2014	76.6		
BANIF		2011		15.8	
Caixa Geral de Depositos		2011		120.6	
total balance sheet	557.1	2012	76.6	273.5	350.1
% of total balance sheet	100.0		13.8	49.1	62.9
% of GDP	330.8		45.5	162.4	207.9
Latvia					
Parex Banka		2008	4.9		
Latvian Mortgage and Land Bank		2009		0.9	
total balance sheet	31.0	2008	4.9	0.9	5.8
% of total balance sheet	100.0		15.8	2.9	18.7
% of GDP	127.6		20.1	3.7	23.8
Hungary					
FHB Mortgage Bank		2009		2.7	
Total balance sheet	130.4	2009	0.0	2.7	2.7
% of total balance sheet	100.0		0.0	2.1	2.1
% of GDP	139.2		0.0	2.9	2.9
Romania					
total balance sheet	90.5	2014	0.0	0.0	0.0
% of total balance sheet	100.0		0.0	0.0	0.0
% of GDP	60.3		0.0	0.0	0.0
Austria					
BAWAG P.S.K.		2008		40.8	
Hypo Alpe Adria		2008	43.0		
Hypo Tirol		2008		13.0	
Kommunalkredit Austria		2013	37.0		
Oesterreich Volksbanken		2008		55.8	
total balance sheet	1060.2	2008	80.0	109.6	189.6
% of total balance sheet	100.0		7.5	10.3	17.9
% of GDP	363.2		27.4	37.5	65.0
Belgium					
DEXIA		2010	263.0		
Fortis		2008		572.0	
KBC		2008		355.6	
total balance sheet	1426.3	2008	263.0	927.6	1190.6
% of total balance sheet	100.0		18.4	65.0	83.5
% of GDP	402.8		74.3	262.0	336.3
Germany					
Sachsen Landesbank		2006		67.8	
Baverische Landesbank		2007		416.0	
Commerzbank		2008		625.0	
Westdeutsche Landesbank		2007		286.6	
HSH Nordbank		2008		205.0	
Hypo real Estate Holding		2008		392.5	
IKB Deutsche Industriebank		2007		63.5	
Landesbank Baden-Wuerttemberg		2008		450.0	
Norddeutsche Landesbank		2007		245.4	
Sparkasse KoelnBonn		2008		31.0	
total balance sheet	7892.7	2008	0.0	2782.8	2782.8
% of total balance sheet	100.0		0.0	35.3	35.3
% of GDP	308.1		0.0	108.6	108.6

(billion EUR except otherwise indicated)			Liqui-dation	Restruc-turing	Total
Italy					
Banca delle Marche		2015	22.7		
Banca Monte dei Paschi Siena		2011		240.0	
Banca Popolare dell'Etruria e del Lazio		2015	12.3		
Cassa di Risparmio di Ferrara		2015	6.9		
Cassa di Risparmio della Provincia di Chieti		2015	4.7		
total balance sheet	4062.7	2011	46.6	240.0	286.6
% of total balance sheet	100.0		1.1	5.9	7.1
% of GDP	247.9		2.8	14.6	17.5
Malta					
total balance sheet	52.7	2009	0.0	0.0	0.0
% of total balance sheet	100.0		0.0	0.0	0.0
% of GDP	664.0		0.0	0.0	0.0
Netherlands					
ABN AMRO Bank		2009		386.5	
Aegon		2012			
ING Bank		2007		1013.0	
SNS Reaal		2012	133.6		
total balance sheet	2217.0	2009	133.6	1399.5	1533.1
% of total balance sheet	100.0		6.0	63.1	69.2
% of GDP	359.0		21.6	226.6	248.3
Slovenia					
Abanka Vipa		2013		3.0	
Banka Celje		2013		1.8	
Nova Kreditna Banka Maribor		2012		5.6	
Factor Banka		2012	1.0		
Nova Ljubljanska Banka		2010		17.9	
Probanka		2012	1.2		
total balance sheet	50.8	2012	2.2	28.3	30.5
% of total balance sheet	100.0		4.4	55.7	60.1
% of GDP	141.1		6.2	78.6	84.8
Denmark					
Eik Banken		2010	1.7		
FIH Erhvervsbank		2012		8.1	
Fionia Holding		2008	32.8		
Max Bank		2011	1.2		
Roskilde Bank		2008	5.7		
Vestjysk bank		2011		4.7	
total balance sheet	1138.2	2010	41.4	12.8	54.2
% of total balance sheet	100.0		3.6	1.1	4.8
% of GDP	471.3		17.1	5.3	22.4
Sweden					
Carnegie Investment Bank		2008		3.1	
total balance sheet	907.5	2008	0.0	3.1	3.1
% of total balance sheet	100.0		0.0	0.3	0.3
% of GDP	257.6		0.0	0.9	0.9
United Kingdom					
Bradford & Bingley		2007	70.9		
Lloyds Banking Group		2008		1138.4	
Northern Rock		2007		154.8	
Royal Bank of Scotland		2008		2267.6	
Dunfermline Building Society		2008		3.4	
total balance sheet	8727.5	2008	70.9	3564.2	3635.1
% of total balance sheet	100.0		0.8	40.8	41.7
% of GDP	457.4		3.7	186.8	190.5
Bulgaria					
First Investment Bank		2014		4.5	
Corporate Commercial Bank		2014	3.7		
total balance sheet	47.4	2014	3.7	4.5	8.2
% of total balance sheet	100.0		7.9	9.4	17.3
% of GDP	110.8		8.7	10.4	19.1
Croatia					
total balance sheet	57.8	2014	0.0	0.0	0.0
% of total balance sheet	100.0		0.0	0.0	0.0
% of GDP	134.1		0.0	0.0	0.0
Finland					
total balance sheet	399.4	2010	0.0	0.0	0.0
% of total balance sheet	100.0		0.0	0.0	0.0
% of GDP	220.6		0.0	0.0	0.0
France					
Caisse d'Epargne and Banque Populaire		2009		913.0	
Banque PSA Finance		2011		28.0	
Crédit Immobilier de France		2012	42.0		
total balance sheet	8398.7	2009	42.0	941.0	983.0
% of total balance sheet	100.0		0.5	11.2	11.7
% of GDP	407.8		2.0	45.7	47.7
Lithuania					
Ukio Bankas		2012	3.9		
Lithuania's Central Credit Unions		2012		0.1	
total balance sheet	24.4	2012	3.9	0.1	4.1
% of total balance sheet	100.0		16.2	0.4	16.6
% of GDP	73.2		11.8	0.3	12.2
Luxembourg					
Kaupthing Bank Luxembourg		2009	2.8		
Total balance sheet	1116.8	2009	2.8	0.0	2.8
% of total balance sheet	100.0		0.3	0.0	0.3
% of GDP	3079.4		7.7	0.0	7.7
Slovakia					
total balance sheet	64.2	2014	0.0	0.0	0.0
% of total balance sheet	100.0		0.0	0.0	0.0
% of GDP	85.0		0.0	0.0	0.0
Estonia					
total balance sheet	21.5	2014	0.0	0.0	0.0
% of total balance sheet	100.0		0.0	0.0	0.0
% of GDP	107.5		0.0	0.0	0.0
Poland					
Credit Unions Orderly Liquidation Scheme		2013	4.3		
total balance sheet	379.6	2013	4.3	0.0	4.3
% of total balance sheet	100.0		1.1	0.0	1.1
% of GDP	92.4		1.1	0.0	1.1
Czech Republic					
total balance sheet	195.5	2014	0.0	0.0	0.0
% of total balance sheet	100.0		0.0	0.0	0.0
% of GDP	126.3		0.0	0.0	0.0

Source: European Commission

3.1.4. Programme countries inside the euro area

In the five euro area programme countries, it turned out that the relative share of the banks in need of public support was larger in the countries where public finances were the major cause of the crisis. In Greece, more than 75% of the banking sector received State aid, about 60% in Portugal and 40% in Cyprus, but in the latter country this is still more than 250% of GDP.

In Greece, the banking sector was fundamentally restructured with a concentration of market share in the hand of the four core banks, namely Alpha Bank, Eurobank, National Bank of Greece and Piraeus Bank. Several smaller banks were resolved including Agricultural Bank of Greece and TT Hellenic Postbank.

All big banks in Portugal were in need of capital and in the case of Banco Português de Investimento, Banco Comerical Português and Caixa Geral de Depositos (the public bank), it was provided by the state. Initially, Banco Espírito Santo managed on its own with the help of its major shareholder Crédit Agricole, but eventually fell over a too complex group structure and connected lending. It led to its resolution and the spun-off of the "good bank" Novo Banco which was recapitalized by the Resolution Fund benefitting from a credit from the Treasury awaiting reimbursement of the banks. Contrary to Greece, several smaller banks in Portugal including Banco Privado Português, Banco Português de Negócios and BANIF were rescued often involving a foreign buyer.

With respect to Cyprus, the banking sector suffered a lot through the haircut on its holdings of Greek government debt, but there were also home grown problems linked to excessive lending. Because of massive bailing-in, including uninsured depositors, recapitalisation with taxpayer's money remained limited to the Cooperative Group and Cyprus Popular Bank. The latter bank was eventually resolved involving bail-in of uninsured depositors and its good part being merged into Bank of Cyprus.

In Ireland and Spain, where the real estate bust and its impact on the banks was one of the prime drivers of the crisis, the share of the banking sector affected was "only" 25-30%. A similar qualifier as for Cyprus applies to Ireland. Given the size of its banking sector, the banks benefiting from public support represented eventually about 300% of GDP. Furthermore, as state support is directed to domestic banks, the large presence of foreign banks in Ireland and Cyprus limited also the share of the banks affected.

The restructuring of Allied Irish Banks, Bank of Ireland and the smaller Permanent TSB Group Holdings as well as the liquidation of Anglo Irish Bank Resolution Corporation and Credit Unions in Ireland (Table II.3.1), occurred without the bail-in of senior creditors and the liability management exercises for junior debt went relatively smoothly. In Spain, by contrast, where several savings banks were restructured or liquidated, compensation schemes per bank have been set up to deal with cases of misselling of junior debt to retail investors.

3.1.5. For reference: restructuring and liquidation outside a programme context or country-specific recommendations in the financial sector

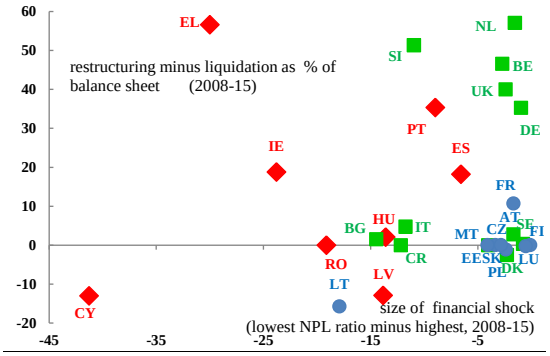
The share of the banking sector needing public support was much smaller in the countries not subject to country-specific recommendations or an external assistance programme (Graph II.3.1). About 15% or less of the banking sector was concerned, but this was still close to 50% of GDP in the case of France, involving Caisse d'Epargne and Banque Populaire, Banque PSA Finance and Crédit Immobilier de France.

3.1.6. Restructuring and liquidation in the wake of a shock

Concerning the importance of the tools used, restructuring of banks was preferred to liquidation (Graph II.3.2), but when the financial shock (here measured by the increase in the NPL ratio) became too large, liquidation appeared unavoidable in a number of cases with the state supporting the liquidation costs. In Latvia, Lithuania and Cyprus, where the banking sector was severely hit, the share of banks liquidated with State aid was larger than of those for which restructuring was sufficient. When the negative shock was smaller one tended to solve the problems through a restructuring of the banks, but this could affect a

large share of the sector (Belgium, Slovenia, Netherlands).

Graph II.3.2: **More liquidation compared to restructuring when the financial shock is larger**



Source: European Commission

However, overall the relation is weak between the negative shock and liquidation as a tool to address the banking problem. In several countries large shocks were observed (Romania, Croatia) and the difficulties caused could be solved without state intervention. Often this was the case because the subsidiary was part of a large group which had sufficient financial strength to cope with the difficulties of the local bank. In Greece and Ireland, restructuring compared to liquidation was important despite the relative big size of the shock presumably because of the too big to fail argument.

3.2. DOWNSIZING, HOME BIAS AND CONSOLIDATION

3.2.1. Downsizing and public intervention in the banking sector

To address the excessive exposure of the banks, considerable downsizing of their balance sheets was part of the answer, in particular when State aid was needed (Graph II.3.3, top panel). The largest reduction since the outbreak of the financial crisis in 2008 was noted in Ireland where bank balance sheets shrunk by almost 70%, but also Cyprus (-42%), Belgium (-32%) and Germany (-31%) witnessed large reductions.

Reflecting the home bias, in most countries especially foreign banks made the largest contribution to the deleveraging process (Graph II.3.3, bottom panel). Exceptions to this general trend are Cyprus among the programme countries and Belgium, Germany, Netherlands and Slovenia among the countries that received country-specific recommendations.

3.2.2. More home bias and less foreign banks

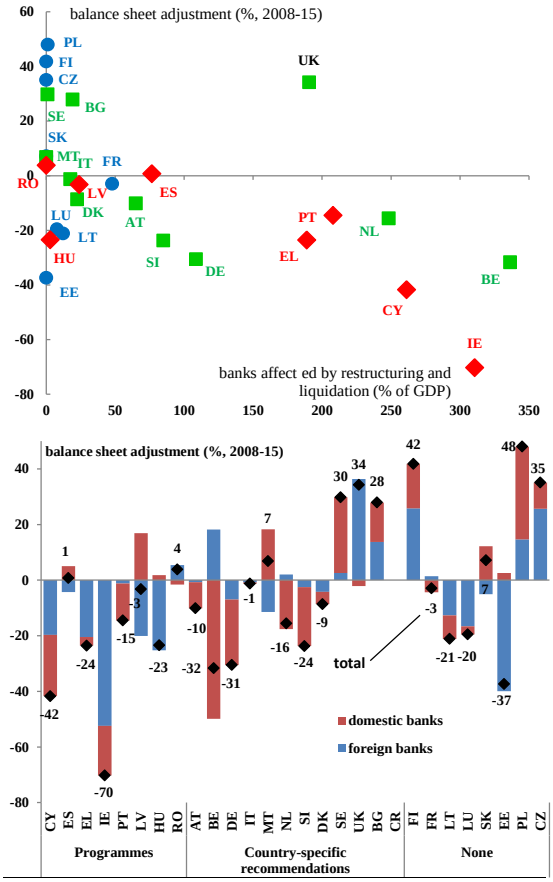
As a consequence of the greater focus on the home country, the share of foreign banks mostly declined (Graph II.3.4, top panel). This retrenchment has to be put into the proper perspective as in countries like Hungary, Latvia and Ireland, just to name the programme countries, the foreign presence in the banking sector was and remains important. By contrast in Greece and Spain, the share of foreign banks was already relatively low fell further to 2% and 5%, respectively, in 2015 (Graph II.3.4, top panel), which, given the size of the market, leaves issues about the dynamism and competitiveness of the sector. To a lesser extent also in Cyprus, foreign groups withdrew during the programme period.

Not only Member States with a programme, several other countries (Graph II.3.4, bottom panel) saw the share of foreign banks decline from low levels, including Italy, Germany and

Denmark ([1]). Against this general trend, a notable increase from low levels in the share of foreign banks was observed in Belgium and the United Kingdom. To the extent the drop in foreign presence may lead to concerns about the degree of innovative capacity or competition, the concentration ratio can shed additional insights.

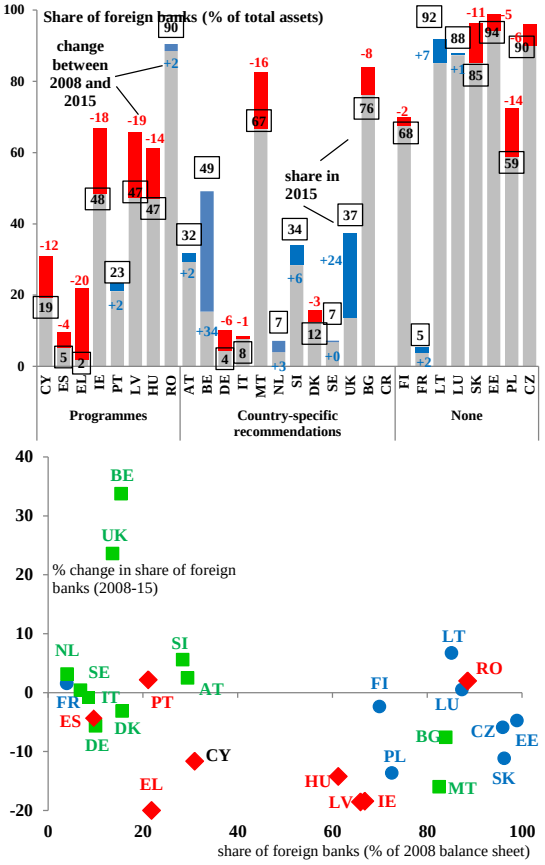
([1]) While the contribution of the domestic banks to the shrinking of the banking sector was bigger in some of these countries, the decline in itself of the foreign banks was larger (e.g. 70% versus 26% in Germany) driving their share down.

Graph II.3.3: **Public intervention and downsizing bank balance sheets**



Note: The large reduction in foreign banks in Estonia is due to the sale by Estonia-registered Swedbank of its Lithuanian and Latvian subsidiaries to the Swedish parent bank in 2011.
Source: ECB (consolidated statistics)

Graph II.3.4: **Retrenchment of foreign banks following the financial crisis**



Source: ECB (consolidated statistics)

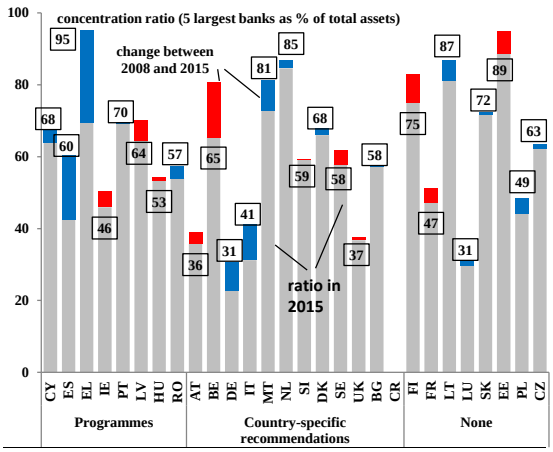
3.2.3. Consolidation between competition concerns and efficiency gains

Not only downsizing the banking sector was one of aims of the restructuring process, also consolidation in countries characterised by many small banks was desirable in order to realise scale effects and efficiency gains. One observes an increase in the concentration ratio in Germany and Italy (Graph II.3.5), where after all the share of the five largest banks remains low mitigating the competition concerns one may have from the low presence of foreign banks. However, if a too low level of consolidation reflects that banks are geographically confined in their operations, some form of protection may nevertheless persist.

In two programme countries, Spain and Greece, a significant consolidation of the banking sector was realised. In particular in the case of Greece, the concentration of the banking sector in domestic hands is very high (Graph II.3.4, top panel and Graph II.3.5). The possible governance issues that this may entail are mitigated by specific provisions for the Hellenic Financial Stability Fund, which is the larger shareholder of the banks and rules to keep the government at arms' length.

Where the concentration ratio declined, the reduction was small and from a relatively high level. The fall was more marked in Belgium still characterised by a concentrated banking sector, but with a much stronger foreign presence. In Austria, the fragmentation of the banking landscape was slightly accentuated (Graph II.3.5).

Graph II.3.5: **Concentration in the national banking market**



Source: European Commission

3.3. THE POST-CRISIS REFORM OF SPANISH AND GERMAN SAVINGS BANKS

A common characteristic before the crisis of both the Spanish and German financial sectors was the relatively high importance of their public and savings bank sectors. The sector represented about 40% of the total domestic banking assets in Spain and one third in Germany at the end of 2009 (Table II.3.2). One important distinction is that while the sector of the *cajas* was rather homogenous in Spain, in Germany two types of savings banks had gradually developed: the traditional locally-oriented *Sparkassen* (savings banks) and the regional-based *Landesbanken*. Only the *Landesbanken* landed into systemic problems (IMF, 2011) during the crisis, for which reason our comparative analysis will pitch only them against the Spanish savings banks.

The majority of *cajas* had over expanded prior to the crisis by taking a disproportionate exposure vis-à-vis the Spanish real estate crisis (IMF, 2012). This was the direct result of an outdated corporate governance structure that provided wrong business incentives and of weak high-level supervision implicitly linked to the public ownership of the banks. *Landesbanken* facing similar governance issues (Hau and Thum, 2009) had departed from their traditional role of providing financing for development in their regions and of supporting the operations of *Sparkassen* and expanded their commercial lending and foreign business, expecting higher returns relative to their meagre profitability in Germany. Particularly in the boom years, investment banking overseas became a significant part of their activities, including into the risky subprime component. The risk-taking attitude seems to have been driven by two major contributors: the political influence exerted by the ownership of regional governments (similar to the case of the *cajas*) and the phasing out of the public guarantees for local savings banks and *Landesbanken*. The latter incentivized the *Landesbanken* to access wholesale funding on a large scale on good terms prior to the end of state guarantees by 2005 and invest the proceedings in mortgage bonds with a high rating. It all seemed like a risk-free gain until the subprime crisis hit them hard.

The unfolding of the financial crisis reaped havoc in both the *cajas* and the *Landesbanken*. Huge losses stemmed from non-performing loans to Spanish real estate developers and construction companies in the former and from US subprime mortgage bonds in the latter. The financial recovery of the savings banks sector followed similar steps in both countries: (i) financial stabilisation was attempted via consolidation of credit institutions (the more solid ones taking over the weak ones) and public sector capital injections and (ii) a reform of the functioning framework of the savings banks, including by placing them into private ownership. Whereas the first step was undertaken with equal commitment in both Spain and Germany, significant progress with the more demanding second step was achieved only in Spain, driven by the conditionality of the Financial Assistance Programme to the Spanish banking sector.

Table II.3.2: **Reform in the German and Spanish savings banks**

	Assets as % of total MFIs assets		Number of institutions	
	Dec-09	Jun-14	Dec-09	Jun-14
ES Saving banks	38.4	32.5	45	11
DE Saving banks	14.4	14.5	431	417
DE Landensbanken	19.6	14.4	10	9

Source: Bundesbank, IMF, European Commission

In Spain, 43 out of 45 savings banks (in early 2010) participated in a consolidation process which reduced the number of credit institutions to only 11 (September 2014). Moreover, out of these 11 credit institutions, about half have been

integrated into reputable Spanish banks. The government has also injected about EUR 88 bn or 8.5% of 2012 GDP into the savings banks during 2008-2012 in order to cover various capital shortfalls and asset relief measures. Guarantees and liquidity measures worth EUR 75bn or more than 7% of 2012 GDP were also provided. Thus, the Fondo de Reestructuración Ordenada Bancaria (FROB) has become a major shareholder in several savings banks, but now the tide is turning. In 2013/2014, FROB made important asset divestitures and privatisations took place, such as the sale of Catalunya Banc to BBVA and of NCG Banco to Banesco Group, or the sale of a 7.5% stake in Bankia. This is important not only for recovering some of the taxpayer money that went into the resolution of the *cajas*, but also for introducing private sector incentives into their governance. The consolidation process in the sector was also accompanied by a significant restructuring effort, where the number of branches and employees of the savings banks decreased by more than 30% over the period.

In addition to the change in ownership, management and physical restructuring of the *cajas*, Spain has also initiated a comprehensive reform of their governance and business model (IMF, 2014). This would ensure that their incentive structure and risk management follows the one of regular banks. For this purpose, a new law was passed which brings about important changes regarding (i) the strengthening of the regulatory regime for the savings banks that still carry out banking activities directly and (ii) the transformation of former savings banks that exercise banking activity indirectly into "banking foundations" under Banco de España's supervision for certain key activities. The first measure refers primarily to upgrading the corporate governance rules for savings banks and confining their activity to their home region, in order to mitigate risks of overexpansion. The second measure introduces certain requirements for the functioning of the "banking foundations" (including the set-up of a reserve fund of liquid assets to be used for the capital needs of the controlled banks, if necessary) as incentives to eventually reduce the control of "banking foundations" over the commercial banks below a certain threshold. The last step for putting in place the new legislative reform was achieved with the approval of the secondary legislation by Banco de España in November 2015. This framework has now to be implemented by banking foundations.

The *Landesbanken* expansion in the boom years ended in several bailout rounds. The stabilisation measures included guarantees, recapitalisations, asset purchases and the set-up of winding-up institutions. Public money injections for recapitalisation and asset relief measures in *Landesbanken* represented around EUR 70 bn (2.5% of 2012 GDP), about half of Germany's total EUR 144 billion over 2008-2012, which is still high in international comparison given that Germany weathered the crisis relatively well. In addition, at the peak of the crisis in 2009, total outstanding guarantees and liquidity measures for the banking sector represented another EUR 135 billion. The recapitalisation was accompanied by a consolidation process, whereby a few *Landesbanken* were merged or integrated vertically with savings banks from the respective regions. The number of full-time employees (FTEs) declined by 19% and the volume of bank assets by 34% in the *Landesbank* groups from 2009 to 2013. The number of *Landesbank* groups remained constant at seven over the same period. Despite some reshuffling among the participating credit institutions, very few mergers took place because the regional state's authorities controlling them did not want to see their influence waning.

This implies that a profound restructuring of the sector depends also on changing the corporate governance framework. In this respect, a reform of the *Landesbanken* sector has not been initiated to date, despite the fact that the financial crisis has revealed systemic risks to financial stability across the sector. Legal restrictions on changing the form of ownership, vertical ownership ties, regional restrictions in terms of competition and a system of mutual guarantees are some of the legal obstacles that prevent a more comprehensive restructuring of the *Landesbanken* sector.

In conclusion, the difficulties of the Spanish *Cajas* and German *Landesbanken* appear to have a common driver, i.e. inadequate corporate governance, risk management and incentives which led to an unsound expansion in the boom years. In the crisis, both the Spanish and German authorities intervened in the troubled institutions in order to preserve financial stability. From this point onwards, the path followed by the two

countries differs. Spain has followed up with a profound reform and restructuring of its savings bank sector, whereas Germany is still hesitant in this respect. Spain's bolder approach occurred in the context of a relatively overall weaker fiscal position and higher cost for the tax-payer for the sector clean-up, which required external financial assistance in 2012. Therefore, the better outcome of the reform in Spain speaks in favour of the transformative power of financial assistance conditionality.

3.4. THE COOPERATIVE BANKING MODEL UNDER PRESSURE

3.4.1. The relevance and specificities of the cooperative banks

The crisis has also impacted the cooperative banking model in some countries (Table II.3.3). Since their inception in the second half of the nineteenth century, the cooperative credit institutions have tried to offer an alternative to the commercial banks. Their organisational principle has always been mutuality rather than profit. Their goal has been to both attract the savings of the local community, usually offering a stable funding base, and to provide working capital for agriculture and the small industry (for a description of cooperative banks and their reaction to the crisis, see also Bűlbűl *et al.*, 2013). The cooperative banks have been complementary to, rather than competing with, the commercial banks that have been specialising in funding the large industrial projects. In the different countries the cooperative banks have adopted different national characteristics.

In Ireland, the Church was the main driver of the cooperative movement. Thus, the country is characterised by a large number of credit unions, each of them organised originally around the local parishes. In Cyprus, the cooperative banks were set up originally in the villages. Later, however, the civil servants created their own professional cooperative banks. The available data suggests that the national cooperative banks differ significantly from each other in terms of relevance for the aggregate economy. For instance, in Ireland and Cyprus, about 87% of the population aged above 15 is member of a cooperative, while the penetration rate in Italy and Greece is much lower. In terms of significance for funding the economy, cooperative banks are relevant in several countries including Germany, France, Netherlands, Austria Cyprus, but less so in Italy, nor in Ireland and Greece.

Despite these national differences, the cooperative banking model is characterised by some recurrent features. These are important for understanding how they have been affected in the crisis. First, the replacement of the profit motive by the cooperative principle implies different management goals and risk assessment practices. Credit projects are not evaluated with respect to their economic fundamentals, but rather on grounds of social inclusion and welfare improvement of the less fortunate. This attitude towards risk can result in a number of loans that would not have been granted, should a purely commercial, business-oriented approach have been followed. On the other hand, the absence of profit maximalisation may keep the cooperative banks from venturing into risky products with potentially large losses. Second, the increased reliance on the local community, both for attracting savings and for identifying suitable investments, requires strong governance in order to avoid that the local elites pressurize the cooperative banks for the funding of special-interest projects, often politically motivated. It may contributes to an economic mispricing of the risk, and hence to higher losses than otherwise.

Table II.3.3: **Main characteristics the cooperative banking sector in Ireland, Cyprus, Italy and Greece**

	Ireland	Cyprus	Italy, 2014		Greece
	2014	2012	cooperative	mutual	2008
Number of institutions	383	97	37	337	15
Number of members, in thousands	3 100	622	na	1 239	196
Penetration rate	86.2%	87.2%	na	2.4%	2.1%
Total assets, in EUR bn	14.3	15.5	520.1	229.8	3.8
Loans, in EUR bn	4.0	11.7	411.5	130.9	3.1
Loans to GDP ratio	2.1%	67.3%	25.5%	8.1%	1.7%
Deposits, in EUR bn	12.0	13.5	397.2	105.1	2.9
Equity	2.3	1.2	61.9	27.0	0.9
Average arrears	17.0%	30.4%	19.7%	18.0%	na
Average RoA	1.7%	0.7%	-0.8%	0.2%	na

Source: National central banks

Given these structural issues, the cooperative banks in Ireland, Cyprus, Italy and Greece showed high non-performing loans and significant capital shortfalls during the crisis. The need for remedial actions became evident. Different models of reform measures have been followed depending on the relevance of the cooperative institutions. Ireland privileged the regulatory approach, while Cyprus had recourse to a de facto nationalisation

of the sector. In Greece and in Italy the cooperative banks have been strengthened through liquidation and commercialisation respectively. These different approaches are presented in further detail.

3.4.2. Reforming the cooperative banks

Ireland

Given the importance and presence of credit unions in Ireland, the decision-makers opted for maintaining the sector through better regulation. In the short-term, the Registry of Credit Unions instructed those credit unions that did not meet the minimum regulatory reserve requirements of 10% to restore their reserve positions. On approximately fifty occasions since 2009, the Savings Protection Scheme has provided support in that direction. As of end-2014, ten credit unions reported that they were not meeting the minimum regulatory requirement, while five of them had regulatory reserves of less than 7.5% of total assets.

In order to improve the regulatory and supervisory framework, the Minister for Finance in 2009 requested that the Registry of Credit Unions, on behalf of the Central Bank, carry out a strategic review of the credit union sector in Ireland. This strategic review highlighted significant deficiencies in the regulatory framework, and in particular i) the lack of governance and competency requirements, ii) the lack of powers available to the Central Bank for preventive intervention and iii) the limitations of the external support mechanisms for facilitate credit union access to liquidity and capital. As a follow-up measure, the Central Bank carried out a Credit Union Prudential Capital Assessment Review in 2011. This Prudential Capital Assessment Review identified a significant potential shortfall in reserves for the sector deriving from the scenarios used, and as a result, credit unions requiring increased supervisory focus by the Registry of Credit Unions were identified. An assessment of the individual loan book portfolios found out that 66% of the 401 credit unions in 2011 needed to make additional provisions for bad and doubtful debts. In light of the loan book assessments and the Prudential Capital Assessment Review, regulatory actions, including curtailing dividend payments and placing restrictions on the business of individual credit unions, have been taken in order to strengthen the capital position of the sector. In addition, a targeted asset review programme that facilitates specific regulatory actions began in 2012.

On 31 May 2011 the Commission on Credit Unions was established in accordance with the Programme for National Government 2001-2016. Nearly one year later the Commission on Credit Unions presented its final report, containing over sixty recommendations across an extensive range of areas, to the Minister for Finance. The key areas of the recommendations of the Commission on Credit Unions that have been implemented since 2012 include i) new governance and prudential requirements, ii) the introduction of fitness and probity requirements, iii) the creation of a credit union handbook, iv) the set-up of a stabilisation support mechanism and v) consultations on a number of regulatory initiatives. As a result of this comprehensive regulatory overhaul, the credit unions sector consolidated, including through mergers and liquidations, and overall has been strengthened.

Cyprus

In the case of Cyprus, a different approach was followed. The due diligence of the banking sector identified a EUR 1.5 billion capital shortfall in the cooperative credit institutions. Given the lack of interest from private investors, it was agreed that the government should provide the necessary funds, made available through the financial sector envelope of the macroeconomic adjustment programme. At the same time, the Cooperative Central Bank, which received the State aid, recapitalised the individual cooperative banks. The State aid was finalised in March 2014 and brought about the obligation for the cooperative banks to follow a restructuring plan in order to recover viability and to ensure their capacity to pay the State aid.

The restructuring plan of the cooperative banks in Cyprus targets improved efficiency, better governance and a sustainable return to profitability. The overall structure of the sector has been gradually streamlined through the merger of 93 institutions into 18 individual cooperative banks and later into the sole Cooperative Central Bank. The provisioning policy was revised on the basis of the new Central Bank Directive, and additional

risk limits were set up. Management decisions, and especially risk assessment and arrears management, were centralised in an attempt to avoid mispricing of risk and misallocation of credit. Information systems have been strengthened. Progress with the implementation of the restructuring plan is monitored regularly through the publication of key performance indicators with respect to asset quality, funding, capital and efficiency.

Italy

In early 2015 and 2016, the reform of Italy's largest cooperative banks (*banche popolari*) and small mutual banks (*banche di credito cooperativo*) addressed long-standing concerns regarding the "second-tier" Italian banks, which have been considered the most vulnerable within the Italian banking sector. This vulnerability has been consistently linked with the rigid cooperative features of the corporate governance framework, which hindered effective oversight and control of shareholders over the management of banks, and also undermined the attractiveness of banks to potential institutional investors.

In early 2015, the Italian authorities adopted a reform of the largest cooperative banks (*banche popolari*), according to which these banks were requested to transform themselves into joint-stock companies. This reform abolished the typical cooperative features, i.e. the "one head - one vote" principle whereby every shareholder held one vote irrespective of the size of his holding, and the 1% ceiling on the stake of individual shareholders. The abolishment of the cooperative features aimed at improving banks' corporate governance, facilitating capital increases and triggering the consolidation of the sector. Furthermore, the reform introduced more flexible voting rules for mergers and acquisitions, and decisions on the change of legal form.

Only cooperative banks with total assets above the threshold of EUR 8 billion are required to transform themselves in joint-stock companies.([1])

The full implementation of the reform and thereby the transformation of these *banche popolari* in joint-stock companies should be completed by end-2016, but there have been delays. The transformation into joint-stock companies has to be done through a decision of the general assemblies of shareholders whereby relaxed majority rules apply, as specified by the reform. Alternatively, banks may choose to reduce the size of their balance sheet below the threshold of EUR 8 billion, so that the above obligation would not apply. In case the concerned banks would fail to comply with the above obligation, the Bank of Italy could intervene by using its prudential tools – possibly imposing the transformation on its own initiative – or request the ECB to revoke the banks' license or apply other available options in its framework or secondary legislation. Several *banche popolari* already transformed themselves in joint-stock companies, but most of them plan to complete the transformation in the second half of 2016.

In April 2016, the Italian Parliament approved the reform of the small mutual banks (*banche di credito cooperativo*) with the aim to tackle the weaknesses of this sector, which comprises of 371 cooperative banks. The reform of the small mutual banks aims to establish a single central holding group for the small cooperative banks in order to support the consolidation of the sector. The small cooperative banks will have to join this holding group which will be established as a joint stock company with total capital of no less then EUR 1 billion. The adherence to the holding group is a pre-condition for maintaining the license to carry out banking activities in the form of cooperative credit bank.

The holding group will manage and coordinate the member banks, which will preserve their mutualistic nature and hold the majority of the group's capital, with the remaining capital to be held by external investors. The relationship between the holding group and the individual mutual banks will be governed by so-called "cohesion contracts". The reform of the mutual banks includes also an "escape" clause makes, which allows individual mutual banks to not join

([1]) The ten *banche popolari* with total assets in excess of EUR 8 billion are: UBI Banca, Banco Popolare, Banca Popolare di Milano, Banca Popolare dell'Emilia Romagna, Banca Popolare di Sondrio, Credito Valtellinese, Banca Etruria, Banca Popolare di Vicenza, Veneto Banca and Banca Popolare di Bari. Some of these banks are listed on a stock exchange.

the cooperative banking group, but such a decision is subject to strong disincentives. Finally, the reform provides for the possibility to set up separate autonomous groups for the mutual banks located in provinces of Trento and Bolzano. Considering its envisaged size, the future cooperative banking group would be supervised by the SSM.

Greece

The Greek cooperative banking sector emerged in the 1990s through the successive creation of 16 cooperative banks over a period of 10 years. When the sector entered the crisis, it remained fragmented with limited centralization and marginal size, representing EUR 3.5 billion in assets which was less than 1% of the Greek banking sector and half the banks had less than EUR 100 million assets each, while one bank represented half the sector. Due to their cooperative nature, scope of business and small size, these banks have historically had concentrated risk exposures and limited profitability (when compared to larger commercial banks); they also experienced difficulty to attract talented and independent management teams. The Greek cooperative banks have chosen to remain locally governed and very independent from one another but they use Panellinia bank as a service provider for IT, equipment, administration, money market, ATMs, business transactions and internal audit.

As a result of all the above, most of these banks were ill-equipped to face adverse economic conditions and were thus severely hit by the financial and economic crisis, resulting in capital shortages and liquidity imbalances for most of them. Since the beginning of the crisis, the Bank of Greece has closely monitored the evolution of the sector but no real sector-wide initiatives or strategies have been developed though the banking sector strategy of 2013 indicated some plans for more centralisation. The practice followed especially at the beginning of the economic adjustment programme was to resolve cooperative banks that could not comply with regulatory capital and liquidity requirements. The resolution in their case meant that all their deposits had been transferred to a core Greek bank and all assets and remaining liabilities and capital along with the operation (IT, branches, buildings, etc) entered into liquidation. The reason of transferring no assets along the deposits was that core banks did not accept them given their poor quality, small sizes and non-compatible operation environment. The Hellenic Financial Stability Fund financed the funding gap of the resolutions from the funds provided by the Programme. As a result, the Hellenic Financial Stability Fund obtained a claim on the liquidation estates. The first resolution of cooperatives took place on 18 of March 2012, when three cooperative banks were resolved.

In February 2013, the Bank of Greece launched an assessment of the 13 remaining cooperative banks which confirmed significant structural as well as crisis–linked issues. Firstly, most banks faced significant challenges with capital below the regulatory minimum of 10% and low or negative profitability with most banks showing a return on assets below 0,5%, in part due to high operating costs with most banks having a cost to income ration above 60%. They had high NPLs with over half the banks reporting NPLs above 40% and/or NPL coverage below 30%. Most banks had difficulty to retain existing capital (increased request for share liquidation by existing members) and/or raise fresh capital. Furthermore, they had liquidity challenges with loan-to-deposit ratios above 100% and/or liquid asset ratios below 20%, unstable deposit base and no access to the Eurosystem. These meant an immediate threat to these banks' survival as cooperative banks could rely only on the interbank funding on an ad-hoc contractual basis without a structural agreement. Finally, most banks, despite efforts to comply with supervisory requests, continued to have significant governance and operational issues, mainly attributed to the banks' nature and size.

In an attempt to enhance the permanence of the cooperative banks' capital and the cooperative banking sector's viability, the authorities introduced significant changes in the legal framework. In December 2012, stricter rules for buy-back of cooperative shares were introduced, in order to safeguard the adequacy of cooperative capital and banks' liquidity position.([1])

([1]) Bank of Greece's prior consent is needed for the buy-back of cooperative shares in the case that the cumulative nominal amount of these shares exceeds the threshold of 2% of the bank's own funds on an annual basis. Bank of Greece was also authorized to block any buy-back of

Furthermore, to avoid capital volatility and enhance corporate governance, the Greek Banking Law imposed stricter requirements on capital composition, broadened the availability of capital,([1]) and imposed stricter rules on governance.([2])

Despite efforts, three cooperative banks in the fourth quarter of 2013 failed to raise the necessary capital through public offering and were resolved. The number of cooperative banks was reduced to ten.

From January 2015, Greek cooperative banks had to prepare their financial statements in accordance with International financial reporting standards (IFRS). The Bank of Greece conducted a capital needs assessment exercise for the these banks to assess the impact from the first time implementation of International Financial Reporting Standards and conservatively estimate the capital needs of all cooperative banks over the period 2014 – 2016 under both a baseline and an adverse scenario. The assessment revealed that four co-operative banks had a capital shortfall, a fifth stood at a neutral position and the other five recorded capital surplus. The four banks were requested by the Bank of Greece to raise capital by December 2015. Three of them managed to raise enough capital from private sources while one was put under resolution, using funds available in the Hellenic Deposit and Investment Guarantee Fund.

The situation of the remaining nine Greek cooperative banks remained fragile even beyond 2016 given the high level of NPLs, low capital buffers and significant liquidity challenges exacerbated by the capital controls in place for more than a year by now.

cooperative shares, in the case such an action would potentially compromise the bank's viability.

([1]) The law established a new category of shares without voting rights but with multiple dividends and eliminated the 2% limit regarding the participation of a member in a cooperative bank's share capital. The voting rights in the general assembly, however, remain limited up to 2% of the total votes.

([2]) Two members of the board of directors responsible for the strategy and operation of the bank can be no cooperative members and must be pre-approved by the Bank of Greece under stricter "fit and proper" requirements..

3.5. THE PLACE OF PUBLIC BANKS IN SOME MEMBER STATES

This section touches upon two aspects of the role of the state in the financial sector. First, in some Member States, state ownership was not restricted to savings or regional banks, but could concern relatively large national players sharing the same kind of business models as private commercial banks. The case of Slovenia and Portugal is highlighted, which both exhibited structural state ownership in their banking sector before the crisis. It increased even further when the crisis hit and the respective governments decided to recapitalise failing institutions. While Slovenia has committed to reduce state ownership in its banking sector and has undertaken steps towards privatisation, it recently slowed down its ambition. Portugal has rather chosen to preserve the status quo.

Second, the role of public investment banks which aim at channelling funds to SMEs, backward regions or particular sectors is discussed. Greece and Portugal have attempted to set them up, but neither bank has started lending yet.

3.5.1. Public banks in Slovenia and Portugal

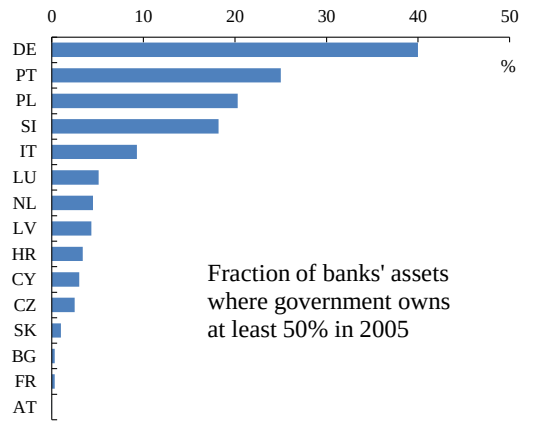
Government ownership in the Slovenian banking system has been structurally high (Graph II.3.6) and increased further. The top three banks and a couple of smaller but sizeable domestic banks were all controlled by the state, directly or indirectly ([3]). All those state-owned banks turned out to suffer from high NPL ratios around 30%, and huge capital shortfalls culminating at EUR 3.5 billion, in stark contrast to foreign-owned banks with NPL ratios around 10% and negligible capital shortfalls. Reasons for this difference of performance include the greater vulnerability to vested interests leading to distorted incentives, political influence in the everyday management and particularly in its credit underwriting process, poor governance, conflicts of interest, fraud, lack of expertise and deficient risk management.

Given the lack of interest of private investors, at least at the price set by the government, and the wish to avoid liquidation, the state-owned banks

([3]) NLB was controlled at 90%, NKBM 51% (rising to 86% before the bail-out), Abanka 41% and Gorenjska Banka 46%.

were all bailed-out. State aid was approved by the Commission, subject to the fulfilment of the conditions set in the restructuring plan. In particular, Abanka and Celje agreed to merge and the state committed to sell its stake in NLB([1]), NKBM and Abanka-Celje to private investors. The sale of NKBM to Apollo-EBRD was completed on 21 April 2016, while the sale of NLB, initially expected by December 2017, has met a number of difficulties and resistances, in particular a sale price considered as too low by the government. The sale of Abanka-Celje is still in the preparatory phase.

Graph II.3.6: **Proportion of the banking system under government ownership**



Source: World Bank

Portugal's Caixa Geral de Depósitos is the country's largest bank by any measure roughly covering ¼ of the market. Caixa Geral de Depósitos is present in 23 countries, all former colonies and countries with a significant Portuguese diaspora. As the bank has always been 100% state-owned it was systematically rated one notch higher than its domestic competitors until the sovereign crisis broke out. During programme negotiations the initial idea to privatise Caixa Geral de Depósitos at least partially was discarded in favour of selling only its insurance arm. Caixa Geral de Depósitos received EUR 1,650 million state of aid in 2012, EUR 750 million in shares and EUR 900 million in convertible bonds. Unlike in Slovenia, Caixa Geral de Depósitos has not done worse (nor better) than its private competitors of similar size. Given its perception a "rock of confidence" Caixa Geral de Depósitos was able to lure in more deposits and consequently was able to close its commercial gap faster than most competitors. NPLs are broadly in line with the system. Since its capital injection in 2012 Caixa Geral de Depósitos has accumulated over EUR 2 billion in losses which is sizeable, but less than the other two big private banks Banco Comercial Português and Banco Espírito Santo.

3.5.2. Public development banks in the EU

In 17 Member States (Bulgaria, Czech Republic, Germany, Spain, Estonia, France, Croatia, Italy, Latvia, Luxembourg, Hungary, Austria, Poland, Sweden, Slovenia, Slovakia, Finland,) there exists a specialised financial institution geared towards facilitating SME's access to affordable funding ([2]). Some were created after a war and still carry "reconstruction" in their official name (eg Germany's Kreditanstalt für Wiederaufbau (KfW) which was founded in 1948 to channel Marshall-plan funds or the Croatian Bank for Reconstruction and Development, founded in 1992). These 17 institutions are organised in the Network of European Financial Institutions for Small and Medium Sized enterprises. According to the latter their balance sheets add up to EUR 674 billion out of which KfW contributes already EUR 503 billion. ([3])

In 2013, at the end of the programme, Portuguese authorities also announced that they were to create a development bank which was later renamed Development Financial Institution ([4]). Its start was repeatedly delayed and by mid-2016 it still has not financed any business. Likewise, the Greek authorities are in discussion with multilateral lenders about how to set up a Greek development bank with help coming inter alia from other Member States. In autumn 2016 the process is still in its conceptual phase.

([1]) The state was allowed to keep a minority stake of 25% in NLB, which might significantly reduce the interest of potential investors.

([2]) NEFI 2016: http://www.nefi.eu/our-members/

([3]) KfW 2016: Geschäftsbericht 2015 https://www.kfw.de/PDF/Download-Center/Finanzpublikationen/PDF-Dokumente-Berichte-etc./1_Gesch%C3%A4ftsberichte/Gesch%C3%A4ftsbericht-2015.pdf

([4]) European Commission: Memorandum of Understanding § 2.20 during the 10th and 11th review.

4. DEALING WITH IMPAIRED ASSETS

Systemic crises leave behind in the economy massive amounts of distressed assets, typically held by the banks. Resolving these assets is the final stage in the resolution of systemic banking crises. Usual working-out procedures carried out internally with banks' limited resources are temporarily not suitable anymore given the large volumes of impaired assets involved and the specific circumstances of a crisis. Swift action is needed to support overall economic recovery. Impaired assets can be dealt with in two main ways: (i) either they stay on the banks' balance sheet and are worked out by the banks through corporate restructuring, often in conjunction with a state guarantee, or (ii) they are transferred to a separate legal entity, an asset management company. These two approaches are not necessarily exclusive: "simple" assets, needing less specialised skills, can stay on the banks' balance sheet, while more "complicated" assets (syndicated loans, sensitive clients e.g. with significant bargaining power, with connections with banks or politics) or homogenous portfolios of assets allowing economies of scale, go to the asset management company. Finally, whatever approach taken, EU legislation concerning State aid rules and the Bank Recovery and Resolution Directive have to be complied with.

4.1. IMPAIRED ASSETS STAY ON THE BANKS' BALANCE SHEET ("INTERNAL WORKOUT")

4.1.1. Role of the banks

Focusing on the corporate sector, restructuring has two dimensions. The operational restructuring ensures the reorganization of the debtor's productive capacity to secure return to profitability and growth, while the financial restructuring aims at returning to a sustainable level of suitably structured debt ([1]). Corporate financial restructuring is a demanding balancing act for the creditors. On the one hand, debt relief has to be sufficient to secure corporate viability; on the other hand, negative impacts on banks' solvency have to be contained and moral hazard issues also have to be taken into account.

Corporate restructuring is resource intensive. It cannot be carried out without a complete diagnostic of each individual borrower and it requires specialized expertise, both technical and financial. While banks are relatively well equipped to handle financial restructuring, they usually have less knowledge of operational restructuring. In this area, the help of consultants is often unavoidable.

Also, when the number of creditors increases, effective coordination among all of them is necessary to reach an agreement on financial restructuring. Such a cooperation between creditors is everything but easy to achieve, since their interests are rarely aligned. Foreign vs. domestic banks, public vs. private banks, going concern vs. gone concern banks, asset management company vs. banks, big vs. small banks, are all different groups with potentially very diverging objectives and time horizons.

4.1.2. Role of the authorities

The authorities provide the corporate restructuring framework, which is currently being reformed in many countries, as the crisis revealed many limitations and scope for improvement.

Authorities can act along both informal and formal dimensions. Informally, they can provide guidelines and logistic facilities. Formally, they can support official negotiations, by establishing an institutional framework for these negotiations. They can develop a legal status, possibly through emergency and/or temporary legislation expediting normal processes. They can also adopt specific rules covering bankruptcy, reorganization and liquidation. And they can set up fast-track procedures, dedicated courts and specialized judges. The main objective is to limit the risk of paralysis if one side has too much negotiating power or processes are too formal. Authorities should play a mediating role to facilitate and expedite discussions between creditors and debtors, especially when conflicts of interests (between creditors and debtors, but also among creditors) are particularly acute.

([1]) Similarly for households one can discern two dimensions in debt restructuring with the aspect of corporate viability to be replaced by a social concern.

Table II.4.1: **Asset protection schemes in the EU**

Country	Austria	Austria	Austria	Belgium-France	Belgium-Netherlands	Belgium	United Kingdom
Year	2009	2009	2011	2010	2008, 2009	2009	2009
Beneficiaries	BAWAG P.S.K.	Hypo Group Alpe Adria		Dexia	Fortis	KBC	RBS
Total assets	EUR 40.8bn	EUR 33.8bn	EUR 35.1bn	EUR 567bn	EUR 745bn	EUR 356bn	EUR 1,696bn
Scheme name	-	Austrian Emergency Bank Support Scheme	-	FSA measure (2)	-	SPM (State Protection Measure)	APS (Asset Protection Scheme)
Asset relief (nominal value)	EUR 400mn (1)	EUR 100mn	EUR 200mn	USD 16.9bn	EUR 21bn	EUR 20bn	GBP 281bn
First loss tranche (borne by the bank)	-	-	-	USD 4.5bn (3)	EUR 3.5bn	EUR 3.2bn (4)	GBP 60bn
Second loss tranche (fully or partially borne by the state)	-	-	-	USD 12.4bn	EUR 1.5bn	EUR 2bn	GBP 221bn (6)
Third loss tranche (optional)	-	-	-	-	EUR 16bn (estimation)	EUR 14.8bn (5)	-
Remuneration fee	300 bp per annum	not public	10% per annum on the part of assets guaranteed by Austria	124 bp per annum	not public	650 bp per annum (for the 2nd tranche) and 1.33bn (for the 3rd tranche)	700mn fo the first 3y, and 500mn thereafter (+cumulative fee of 2.5bn)

(1) 40% borne by the bank, 60% borne by the state. State's net payment obligation occurs only in case of BAWAG's insolvency.
(2) Financial Security Assurance Group (acquired by Dexia in 2000) with severe exposure to the US subprime market during the financial crisis."
(3) In the event of default, any payment by the states must be reimbursed by Dexia in cash.
(4) or 7.1bn if the extra losses on the equity, junior and mezzanine tranches are included.
(5) 90% of losses (EUR 13.3bn) will be borne by Belgian authorities and KBC will assume 10% (EUR 1.5bn).
(6) 10% covered by RBS, 90% covered by the state.
Source: Financial statements and State aid decisions

4.1.3. A useful benchmark: the London Approach

Under the leadership of the Bank of England, UK banks developed in 1970 the London Approach as a set of informal guidelines on a collective process for voluntary workouts to restructure debts of corporates in distress, while maximizing their value as going concerns. The initiative grew from the recognition that creditors would likely achieve better returns through collective efforts to support an orderly rescue of a firm in distress, instead of forcing it into a formal insolvency.

Building on the London Approach, the London-based International Association of Restructuring, Insolvency and Bankruptcy Professionals (INSOL International) published in 2000 a statement of eight principles for a global approach to multi-creditor workouts. INSOL principles remain today a useful starting point in the design of out-of-court debt restructuring guidelines.

Besides UK, out-of-court workout schemes have been or are being set up in a number of EU countries, like France, Latvia, Romania, Ireland, Cyprus and Greece. This non-judicial, coordinated approach recognizes that creditor interest is best served by collective negotiations rather than unilateral action. It provides an out-of-court negotiation framework between creditors and corporate debtors, where the authorities act as facilitator. The existence of strong court-supervised processes as back-up must incite all stakeholders to join.

Since (pre-)insolvency laws are not harmonized across Member States, out-of-court workout schemes are very diverse and need to be customized to each national legal insolvency regime. They usually all share the basic principles of the London approach, and they can usefully follow the guidelines developed by the European Commission, but they present many differences as well in their concrete implementation. Some continue to heavily rely on the court system (e.g.

Table II.4.2: **Asset protection schemes in the EU (continued)**

Country	Germany				Spain		Netherlands
Year	2009	2009	2009		2009	2009	2009
Beneficiaries	BayernLB	HSH Nordbank	LBBW		Caja Castilla-La Mancha	Cajasur	ING
Total assets	EUR 415bn	EUR 205bn	EUR 450bn	0.0	EUR 25bn	EUR 17.6bn	EUR 1334bn
Scheme name	"Gewaehrtraeg erhaftung"	"Gewaehrtraeg erhaftung"	ABS porfolio	Sealink portfolio (via SPV)	-	APS (Asset Protection Scheme)	IABF (illiquid assets back-up facility)
Asset relief (nominal value)	EUR 21bn	EUR [150-200]bn	EUR 17.7bn	EUR 8.75bn	EUR 3.71 bn	EUR 5.542bn	USD 28bn (borne by the State)
First loss tranche (borne by the bank)	EUR 1.2bn	EUR [2-4]bn	EUR 1.9bn	EUR 2.75bn	EUR 1.24bn	EUR 4bn	-
Second loss tranche (fully or partially borne by the state)	EUR 4.8bn	EUR 10bn (borne by the State)	EUR 6.7bn	EUR 6bn	EUR 2.47bn	EUR 1.13bn	-
Third loss tranche (optional)	EUR 15bn (estimation)	EUR [12-14]bn	EUR 9.1bn (estimation)	-	Not guaranteed	EUR 0.392bn	-
Remuneration fee	50 bp per annum	[3.5-4.5] bp per annum	EUR 336mn for the 1st year	not public	not public	not public	(amendments) 55 bp per annum (+management fee of 10bp on the outstanting amount of the portfolio)

Source: Financial statements and State aid decisions

in Germany and other countries where the judicial system is quite efficient), whereas others build pure out-of-court mechanisms to avoid clogged courts and would only go to the judge for a final ruling on the agreement found among the creditors. Some countries require a unanimous agreement of all creditors for the restructuring to be valid, while in some others an agreement can be enforced upon all creditors as long as a certain majority threshold has been reached. The involvement of the government and/or the central bank in the out-of-court restructuring schemes can also vary a lot.

4.1.4. Potential support via an asset protection scheme

Working out impaired assets often implies significant financial losses. To mitigate them, the state can decide to set up an asset protection scheme (APS). The portfolio of impaired assets remains on the balance sheet of the bank, but losses on the portfolio are guaranteed by the state beyond a first tranche of losses fully borne by the beneficiary bank. The state commits to cover the losses that exceed a first tranche either fully or partially, and typically up to a certain level. Different loss sharing mechanisms exist and a distinction can be made between (i) a first tranche of losses usually fully borne by the beneficiary bank, (ii) a second tranche of losses usually borne to a large extent by the state (the beneficiary bank sometimes sharing a certain percentage of losses in the second tranche), and, optionally, (iii) a third tranche of losses usually fully borne by the beneficiary bank again. Asset guarantee measures are similar to the state writing put options and selling them (typically against fees) to the bank. The maximum upside for the state is the net present value (NPV) of all fee(s) that it contractually receives. This scenario materializes in case impaired asset losses are moderate and hence fully borne by the beneficiary bank. The maximum downside for the state is the net present value of the losses that it bears minus the net present value of all fees.

From 2008 to 2011, 12 banks from Austria, Belgium, France, Germany, Luxemburg, the Netherlands, Spain and UK benefited from an asset protection scheme granted by the state. The nominal value of the guaranteed assets ranged

Table II.4.3: **Centralised asset management companies in the EU**

AMC's name	Finansiel Stabilitet	NAMA	UKAR	Sareb	DUTB
Country	DK	IE	UK	ES	SI
Creation date	13 October 2008	21 December 2009	10 October 2010	28 November 2012	19 March 2013
Beneficiaries	ebn bank Løkken Sparekasse Gudme Raaschou Bank Fionia Bank Capinordic Bank Eik Banki Eik Bank Danmark Amagerbanken Fjordbank Mors Max Bank Sparekassen Østjylland FIH	Bank of Ireland Allied Irish bank Anglo Irish Bank Irish Life and Permanent Irish Nationwide	Bradford & Bingley Northern Rock	BFA-Bankia CatalunyaBanc NGC Banco-BancoGallego Banco de Valencia Banco Mare Nostrum CEISS Caja3 Liberbank	NLB NKBM Abanka Banka Celje Factor Banka Probanka
Banking licence?	No	No	No	No	No
Total assets (latest report)	EUR 3.3bn	EUR 30.1bn	EUR 89bn	EUR 52.5bn	EUR 1.2bn
Total assets (peak year)	EUR 8.6bn	EUR 36.2bn	EUR 128bn	EUR 54.3bn	EUR 1.2bn
Gross (nominal) value	EUR 2.3bn (DKK 17.1bn)	EUR 74.4bn		EUR 97.5bn	EUR 5.1bn
Transfer value	EUR 2.3bn (DKK 17.1bn)	EUR 31.8bn		EUR 50.7bn	EUR 1.6bn
Debt	2 loans of approx EUR 2bn	State guaranteed bonds		State guaranteed bonds	State guaranteed bonds
Equity amount	EUR 268 mn or DKK 2bn	EUR 0.1bn		EUR 4.8bn	EUR 0.2bn
Shareholders	State: 100% (via the Financial Stability Company)	State: 41% Private: 51%	UKFI (Treasury): 100%	Private: 55% State: 45%	State: 100%
Aggregate net result since creation	EUR -3.1bn	EUR -0.3bn	EUR 5.7bn	EUR - 0.3bn	EUR -0.1bn

Source: Financial statements and State aid decisions

from EUR 100 million for Hypo Group Alpe to GBP 281 billion for RBS (Tables II.4.1 and II.4.2).

4.2. BAD ASSETS ARE TRANSFERRED TO A SEPARATE STRUCTURE

When the banks cannot deal with impaired assets on their own, or when the assets could be better dealt with elsewhere, the state might choose to remove the impaired assets from the banks' balance sheets and to transfer them to a separate entity, usually referred to as an asset management company. This entity takes over from the banks the burden of corporate restructuring in order to achieve economies of scale, concentration of expertise and a reduction in the number of parties involved in the negotiations. Such an operation aims at accelerating the clean-up of the banking system, by disposing of assets of failed banks, allowing restructured banks to have a fresh start and regain market access and facilitating the privatization of nationalized banks. It should also contribute to stabilizing markets by spreading over time and smoothing out liquidation of assets and avoiding downward price spirals.

The financial crisis saw the emergence of a significant number of asset management companies in the EU, differing in a number of aspects, such as the mandate, the size, the ownership and the funding.

In some cases (Table II.4.3) there is one unique asset management company purchasing assets from all banks involved in the scheme (e.g. the National Asset Management Agency (NAMA) in Ireland, the Management Company for Assets

Table II.4.4: **Decentralised asset management companies in the EU**

AMC's name	Royal Park Investments SA/NV (RPI)	KA Finanz AG	Erste Abwicklungsanstalt (EAA)	FMS Wertmanagement	HETA Asset Resolution AG
Country	BE	AT	DE	DE	AT
Creation	20 November 2008	28 November 2009	11 December 2009	08 July 2010	31 July 2014
Beneficiary	Fortis	Kommunalkredit	West LB	Hypo Real Estate	Hypo Alpe Adria
Banking licence?	No	Yes	No	No	No
Total assets (latest report)	EUR 0bn	EUR 14.4bn	EUR 72.9bn	EUR 171.1bn	EUR 11.1bn
Total assets (peak year)	EUR 11bn	EUR 17.7bn	EUR 123.3bn	EUR 341.8bn	EUR 12bn
Gross (nominal) value	EUR 20.4bn	EUR 27.2-28.1bn	EUR [65-75]bn	EUR 175.7bn	EUR 18.9
Transfer value	EUR 11.8bn	no transfer	market value (unknown) + EUR 11bn	EUR 173bn	no transfer
Debt	Super senior debt: EUR 4.85bn Senior debt provided bybnP Paribas and by Fortis Bank: EUR 4.85bn	State guaranteed bonds: EUR 6.1bn Money market: EUR 6.6bn		State guaranteed bonds: EUR124bn	Unclear, given the on-going judicial proceedings
Shareholders	AGEAS (ex-Fortis): 44.7% State: 43.5% BNP Paribas: 11.8%	Austria (FINBAG): 100%	State of North Rhine-Westphalia: 48.2% Regional Association of Savings Banks Westphalia: 25.0% Regional Association of Savings Banks Rhineland: 25.0% Regional Association Rhineland: 0.9% Regional Association Westphalia: 0.9%	State: 100% (via SoFFin)	Austria
Aggregate net result since creation	EUR 0.8bn	EUR -3.0bn	EUR -1.3bn	EUR -12.2bn	EUR -7.9bn

Source: Financial statements and State aid decisions

Arising from the Banking Sector Reorganisation ([1]) (SAREB) in Spain, the Bank Asset Management Company ([2]) (DUTB) in Slovenia), while in other cases one asset management company is created for each bank (Table II.4.4).

Also, the asset management company can sometimes benefit from a banking license, in which case it would be correctly referred to as a" bad bank" (e.g. KA Finanz AG in Austria). Being recognized as a credit institution presents several advantages, like the access to central bank refinancing operations or emergency liquidity assistance. On the other hand, a bad bank is subject to strict bank regulations and supervision, like the obligation to keep a substantial amount of capital to cover unexpected losses, which is relatively costly.

Finally, the transfer sometimes only consists in a purely legal transfer of assets, with no actual operational transfer of files. In such a setting, the banks remain responsible for the operational

([1]) In Spanish, Sociedad de Gestión de Activos Procedentes de la Reestructuración Bancaria (Sareb).
([2]) In Slovenian, Družba za Upravljanje Terjatev Bank (DUTB).

Table II.4.5: **Asset management companies' advantages and disadvantages**

	Advantages	Disadvantages
Efficiency	Centralisation of human resources and expertise brings economies of scale. Centralisation of assets and collateral gives more leverage.	In public AMC, efficiency is often weaker due to political pressures. Hiring new and skilled staff and transferring credit files is costly. Transfer of files might disrupt business continuity. Assets can lose value due to passive management. Hiring consultants is often necessary but costly. Determining transfer price is difficult.
Restructuring	Transfer of assets obliges banks to follow restructuring plan. Centralisation of assets and collateral gives more leverage in negotiations to force corporates to restructure.	
Conflicts of interest		Hiring consultants is often necessary but may lead to conflicts of interest.
Stakeholders		Setting up an AMC creates one more stakeholder in the system.
Financial stability	Impaired assets are totally removed from banks' balance sheet. Transfer of assets implies strict valuation exercise and recognition of losses.	AMC can give a wrong sense of security if the cleaning was too partial and/or the transfer price was too high. If no banking license, the AMC remains supervised, but not on the full set of banking rules.

Source: Literature and European Commission

management of the impaired assets, whereas the asset management company, as their new legal owner, assumes all future profits and losses materialising from the assets. Sound and comprehensive service agreements and adequate incentives are indispensable to ensure the success of the operation.

4.2.1. Advantages vs. disadvantages

The setting up of an asset management company presents a number of advantages (Table II.4.5).

It serves as a vehicle for getting NPLs out of troubled banks, based on uniform valuation criteria. It is particularly true in the EU, where any transfer of assets above market price is considered as State aid and must therefore be notified to and approved by the European Commission. Such an approval will only be granted under strict conditions, one of them being that the transfer price cannot be higher than the long-term real economic value of the assets as defined by the European Commission.

It allows government to attach conditions to the purchase of NPLs in terms of bank restructuring. In the EU, this role is assumed by the European Commission, which imposes a restructuring plan for each bank benefitting from restructuring aid and monitors its implementation through a monitoring trustee.

The asset management company centralizes scarce human resources (domestic and foreign) and expertise. As a consequence, it can often handle and work out non-performing loans better than failed banks with weak management and poor credit policies. The asset management company can turn out to be profitable enough to more than compensate the costs related to hiring specialized staff and the setup of the new structure.

It centralizes ownership of collateral, thus providing more leverage over debtors and more effective management. By being granted special legal powers to expedite loan recovery and bank restructuring, it can better enforce operational restructuring of troubled companies.

Finally, transferring of assets to an asset management company allows to buy some time to avoid fire sales and to wait for the beneficial effect of insolvency and other reforms to materialise. Measures to warehouse impaired assets allow for reconciling the need for immediate removal of

non-performing loans from banks' balance sheets with the "slow-burning" nature of the sales process of the assets and many of the proposed reforms.

However, such an approach also presents several potential disadvantages that need to be addressed and mitigated.

In a public asset management company, management practices and expertise may be weaker than in private structures, reducing the efficiency and effectiveness of its operations. Also, these agencies are often subject to political pressure, especially when they are majority-owned by the state.

Costs involved in operating an asset management company may be higher than a private arrangement within the troubled bank. It is not necessarily easy to hire new highly-skilled staff at short notice, especially when most of these contracts are bound to be temporary since the asset management company life is limited. Also, the transfer of all credit files from the banks to the asset management company consumes a lot of resources. Besides, as files are transferred from banks' credit managers to the asset management company's new credit managers, a lot of knowledge on the clients is lost in the process, and a new relation has to be built with the clients.

As a consequence, values of acquired assets may erode faster when they are outside a banking structure. NPLs and collateral are sometimes long-term "parked" in an asset management company, instead of being swiftly liquidated giving a false sense that the financial sector has been cleaned.

Determining transfer prices can be difficult. It usually requires the services of experts and consultants, which consume time and money. If the transfer price is set too high, the asset management company is a convenient way to transform banks' short-term visible losses into the asset management company's long-term hidden losses. On the contrary, if the transfer price is set too low, the recapitalisation cost increases and can exceed the economic and/or political capacity of the state.

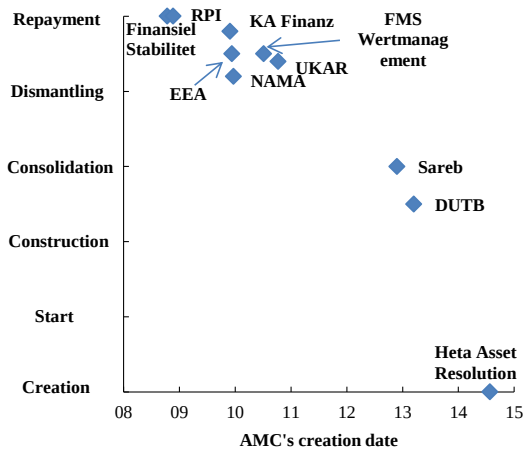
The asset management company often has to hire consultants to compensate the lack, temporary or not, of expertise in different areas. This can lead to conflicts of interests and reputation damage, when, for instance, managers in an asset management company worked at, or partly owned, some of these consultancy companies previously advising on loan deals.

By default, if the asset management company has no banking license, it does not have to abide to all formal bank regulations, but this does not mean that it is not subject to any supervision. In order to avoid that the risks associated with the freshly transferred assets are potentially out of the radar screen, governments ensure that the asset management company is scrutinised by the banking supervisor (e.g. SAREB in Spain).

4.2.2. The asset management company life cycle

An asset management company typically goes through six different stages, from creation to repayment (Graph II.4.1).

Graph II.4.1: **Asset management companies' lifecycle stage end-2014**



Source: Asset management company's financial reports and European Commission

The **creation** of an asset management company often takes place under stress, with banks on the verge of collapsing and financial stability in jeopardy. Mistrust and pessimism are widespread and are not easy to overcome. Although rapid action is needed to avoid further financial losses, there are many obstacles in the way: assets are not clearly identified and sorted properly, important

documentation is lacking and the organization is not yet in place.

The asset management company really **starts** with the identification, documentation and sorting out of the bad loans and assets which form the basis for the activities of an asset management company and the establishment of an appropriate organizational structure which will reflect and facilitate the workout process.

The **construction** phase is dominated by the handling of loans and other engagements. If this is found to be the most financially sound solution and allowed under the mandate of the asset management company, negotiations with a borrower may result in (partial) reduction of the loans. In other cases, loans will be transformed into assets (real estate, equity holdings or other) which are seized by the asset management company. In some cases, bankruptcy is the only solution.

In the **consolidation** phase, a large part of the portfolio consists of equities and real assets, such as real estate, that have been repossessed by the asset management company. This is the intensive phase of operational corporate restructuring. The asset management company is now reorganizing its holdings to increase sales values.

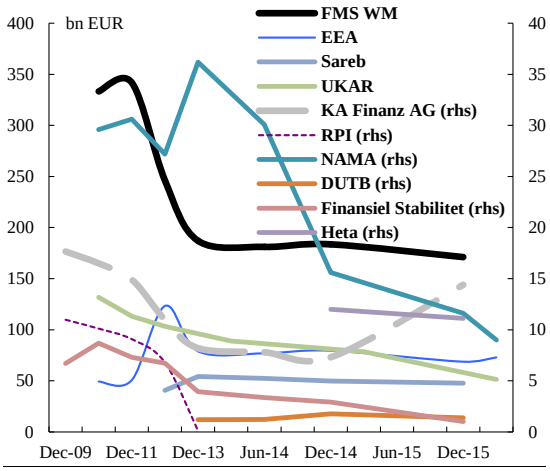
In the **dismantling** phase, most of the assets are ready to be sold. The asset management company is looking for buyers and the focus is on sales negotiations.

In the **repayment** phase, the asset management company's outstanding loans and other obligations are honoured. At the end any residual net worth is repaid to the owners.

4.2.3. Size of the asset management company

The size of the asset management company depends on the amount of impaired assets in the financial system. The latter can sometimes be so large relatively to the capacity of the country that the government is unable to credibly assume the fiscal cost implied by a state-owned asset management company (e.g. Cyprus). In other cases, when the amount of impaired assets is manageable, the size of the asset management company can greatly vary from as little as EUR 1.1 billion (DUTB in Slovenia, 2013) to as much as EUR 341.8 billion (FMS ([1]) Wertmanagement in Germany, 2011) (Graph II.4.2).

Graph II.4.2: **Evolution of asset management companies' total assets**



Source: Financial statements

4.2.4. Type of asset management company

The type of asset management company (centralized vs. decentralized; wide mandate vs. narrow mandate) is closely linked to the number of failing banks in the system, the capacity to achieve economies of scales and the possibility to restructure corporates back to viability.

When impaired loans are spread across many banks and are relatively homogenous in terms of sector (e.g. real estate), a unique **centralized** asset management company can make sense to pool together resources that banks cannot afford on their own and to achieve economies of scale (e.g. SAREB in Spain, NAMA in Ireland, DUTB in Slovenia, United Kingdom Asset Resolution (UKAR) in UK and Finansiel Stabilitet in Denmark). On the contrary, if the impaired loans are not systemic but rather isolated and specific to one bank, with very particular causes that are not especially shared by other banks in the system, a **decentralized** asset management company customized to the problematic bank is more adequate (e.g. Royal Park Investments for Fortis, KA Finanz AG for Kommunalkredit, Heta Asset

([1]) FMS probably stands for Finanzmarktstabilisierung.

Resolution for Hypo Alpe Adria, FMS Wertmanagement for Hypo Real Estate, and Erste Abwicklungsanstalt for West LB).

When impaired loans are large and the market depressed, fire sales are usually not an option. In this case, a **wide mandate** is granted to the asset management company to restore viability of participating banks and restructure, collect and dispose of their impaired assets over the long term (e.g. SAREB, NAMA, DUTB). Conversely, when the amount of distressed assets in the financial system is limited, there is no need for a wide mandate: banks can be resolved and assets liquidated. This situation of **narrow mandate** is the most common (e.g. UKAR, Finansiel Stabilitet, RPI, FMS Wertmanagement, etc.).

Typically,

- centralized wide-mandate asset management companies deal with loan book assets of viable banks (e.g. SAREB, NAMA, DUTB);
- centralized narrow-mandate asset management companies deal with (potentially) all assets of failed banks (e.g. UKAR, Finansiel Stabilitet);
- decentralized narrow-mandate asset management companies often deal with a sizable share of trading book assets (e.g. repackaged US subprime). They are often used to facilitate the sale and/or to recapitalize individual SIFIs with large and complex balance sheets (e.g Fortis, Hypo Real Estate).

4.2.5. Asset management company funding

The type of funding depends on the relative size of the asset management company with respect to the fiscal capacity of the state.

In Ireland, Spain and Slovenia, given the large relative size of the asset management companies in these countries or the lack of fiscal space, the asset management companies are funded by bonds guaranteed by the government. Unlike government bonds, asset management company bonds present the advantage not to increase the gross debt level of the country as long as the asset management company is privately owned and the government does not assume most of the risks. It is the case in Ireland and Spain, but not in Slovenia. On the other hand, they can be rather illiquid, as there is no readily available secondary market to exchange these bonds. However, eligibility as collateral in monetary policy operations provides the banks with the possibility to easily refinance these loans if necessary.

In countries where the size of the asset management company is fiscally more acceptable, direct funding through government bonds is usually the rule (e.g. UKAR in UK, Finansiel Stabilitet in Denmark). In some instances, the asset management company can also be funded by the central bank, like in the USA and Switzerland, which in the EU would be more of an issue given its strict definition of the role of the central bank and independence of monetary policy.

In many asset management companies, the relative importance of equity in the funding structure is quite minor. With the exception of KA Finanz, which holds a banking license, all asset management companies in the EU are exempt from the stringent capital requirements applying to banks, so that authorities have no real regulatory incentive to inject more capital than strictly necessary. However, since (sometimes substantial) losses often materialised in the early years of the asset management company's life, the government is inclined to foresee at least enough capital to absorb these potential losses and avoid any further capital injection that would be politically difficult to assume.

4.2.6. Asset management company ownership

Asset management company ownership is important because it often determines whether the debt of the asset management company will be consolidated with the general government debt. Eurostat (2012) considers that "publicly controlled defeasance structures, for which there is evidence that the government is assuming the majority of the risks, are to be classified inside the general government sector. Should this be the case, the balance sheet of the defeasance structure is consolidated with that of government, and in particular its liabilities would increase Maastricht debt. If on the contrary this unit is mostly privately owned, the exact involvement of government will be closely examined with a view to determine

whether government takes on most of the risks and rewards attached to some problematic assets or if government is covering the losses of the problematic assets through a guarantee mechanism. It is only in this case that some impaired assets would be recorded on the balance sheet of government with imputed corresponding liabilities which would increase Maastricht debt".

Therefore, when the fiscal space is reduced, governments tend to privilege a private majority, in order to avoid the consolidation of the asset management company debt in the public gross debt. In Ireland, NAMA is majority-owned by three private companies (17% each), while in Spain SAREB is majority-owned by Spanish banks, along with other European financial institutions. The presence of local banks among the shareholders of an asset management company may facilitate future restructuring of syndicated loans held together by the asset management company and these local banks, since the latter have a financial incentive to collaborate, but it can also prevent a full cleaning of the banking system by obliging banks to share the future losses of the asset management company through their capital participation.

In Slovenia, DUTB is still fully owned by the government, but this situation might change in the future if the current law is amended and if private companies show some interest in entering DUTB's capital.

When there is sufficient fiscal space, and/or the asset management company is relatively small, a full government ownership is often the rule, like in Germany (FMS Wertmanagement), Denmark (Finansiel Stabilitet) and the UK (UKAR).

In the USA and Switzerland, asset management companies are majority-owned by the central bank and minority-owned by private companies.

4.2.7. Operational best practices

Strong political will and sufficient and credible financial support from government are absolutely needed to deal efficiently with non-performing assets. Asset management company practices should be transparent, its mandate clear and its governance strong. Otherwise, it might come under the fire of the critics and lose the support of the government, which would seriously compromise the objectives of the asset management company.

The legal framework needs to be supportive, by granting both special powers to the asset management company and protection to its employees.

4.2.8. Transfer price

Ideally, the transfer price should be close to the fair value. If it is set too high, it distorts competition and postpones the recognition of losses. If it is set too low, the rescued banks or the government might not be able to cope with the substantial one-off loss caused by the transfer. On the other hand, although the pricing process is a difficult exercise, it should not take too long and unduly delay the recovery of the banking system.

In the EU, the transfer price cannot be higher than the European Commission's estimation of the "long-term real economic value", which usually falls between the (low) market price and the (high) book value. This valuation is carried out on a sample of assets and then extrapolated to the rest of the portfolio to be transferred. Transfer of impaired assets usually creates significant losses in the banks' balance sheet, since the transfer price is substantially lower than the book value, at least in most EU cases during the crisis. Burden sharing of shareholders and subordinators creditors may be necessary to alleviate these losses and sometimes to make the transfer of impaired assets possible at all. It also presents the advantage to reduce moral hazard. In the EU, burden sharing of shareholders and subordinated creditors has been a mandatory condition for any State aid pursuant to the "Banking Communication" of August 2013.

4.2.9. Bank Recovery and Resolution Directive

Besides the State aid rules introduced by the 2013 Banking Communication, the design and operations of an asset management company may also be affected by the entry into force of the Bank Recovery and Resolution Directive (of application since January 2015 and the bail-in tool since 1 January 2016) and the Single Resolution Mechanism Regulation (entered into force in July 2014).

The Bank Recovery and Resolution Directive and Single Resolution Mechanism Regulation introduced the key principle that if a bank needs State aid to maintain its viability or solvency, it should in principle be considered failing or likely to fail, which is the main condition for putting the bank in resolution. Therefore, if some form of State aid is provided in the context of the transfer of non-performing loans to an asset management company, this in principle may lead the bank to be put in resolution. The framework of the Bank Recovery and Resolution Directive and Single Resolution Mechanism Regulation entails that when a bank is put in resolution it becomes subject to the extensive powers granted to resolution authorities, which include the possibility to apply bail-in to shareholders and creditors. Such bail-in may extend to senior unsecured creditors and uninsured depositors. The bail-in tool entered into force only from 1 January 2016.

The Bank Recovery and Resolution Directive and Single Resolution Mechanism Regulation allow the provision of State aid without this triggering resolution but only in limited cases. The instrument in this respect is the so-called precautionary recapitalisation. This tool is only available to solvent banks which do not breach the requirements for continuing authorisation and reveal only a shortfall under the adverse scenario of the relevant stress test. Also, very specific conditions must be complied with to provide such support. If a bank receives precautionary recapitalisation, it will be subject only to burden-sharing (bail-in) established under the 2013 Banking Communication, which is limited to subordinated creditors and shareholders.

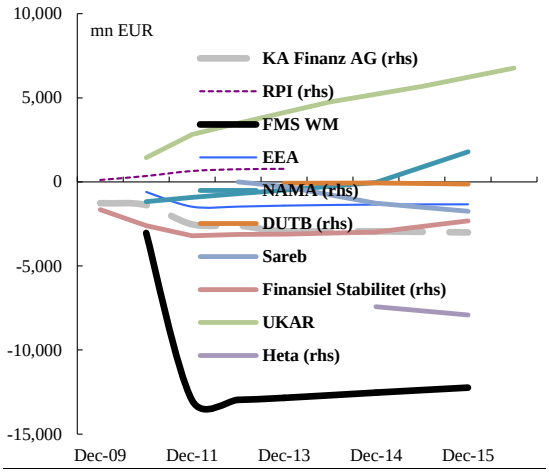
If the transfer of non-performing loans to an asset management company is performed without any State aid (at market prices or lower), there are no direct implications of the Bank Recovery and Resolution Directive and Single Resolution Mechanism Regulation framework. However, it is then important that the bank concerned can bear the loss resulting from the transfer of assets to the asset management company and that the losses do not lead to a breach of the requirements for authorisation.

It is worth noticing that the transfer of assets to an asset management company does not generate a loss per se, but rather triggers the recognition of a loss. Ideally, the valuation exercise implied by the transfer should already happen before, and assets should in general be valued at their (theoretical) "transfer price", whether an actual transfer takes place or not. However, in practice, thin capital buffers and the absence of credible backstops may prevent banks in difficulties from recognizing their latent losses upfront.

4.2.10. Profitability

The asset management company's future profitability is naturally closely related to the initial transfer price. The higher it is, the less profitable the asset management company will be. Besides that, the competence of the management, the powers granted to the asset management company, the timing of the sales and the evolution of the economic situation are other important drivers of the profitability.

Graph II.4.3: **Evolution of asset management companies' accumulated profit after taxes**



Source: Financial statements

In many cases (Graph II.4.3), the asset management company books a significant loss in the first year of its activities, in order to recognize losses that were not sufficiently accounted for in the transfer price or by recognition of the transferred assets at fair value. Subsequently, the asset management company reduces the losses or even returns to profit for most of its lifetime. In March 2016, all asset management Companies presented a substantial accumulated loss since their creation, except UKAR (in United Kingdom), NAMA (in Ireland) and RPI (in Belgium). FMS-

Wertmanagement has even cost EUR 12.2 billion to the German taxpayers to date. Note that some asset management companies are still relatively recent and might (at least partly) offset their past losses with future profits after some years of activity.

Profitability is not the only metric on which the success of an asset management company should be measured. The cleaning of the financial sector, revival of the real estate market, the successful restructuring of the corporate sector and the broader recovery of the economy are all important objectives that a successful asset management company can help achieve.

4.3. CONCLUSION

Asset purchases and asset guarantees have different implications, advantages and disadvantages. Circumstances permitting, Member States seem to prefer asset guarantees: they are easier to implement, they do not generate upfront losses in banks, they do not increase the gross debt level as long as they are not activated, and they can still give the banks the incentive to optimize the work-out process since the guarantee is only partial. However, asset purchases might be more suitable whenever the credibility of the banks is at stake and the market needs to see an actual cleaning of banks' balance sheet, an effective transfer of risks and a convincing upfront recognition of losses. Also, when the banks lack the resources to handle the work-out of impaired assets, transfer to a specialized structure is attractive option.

There are many challenges in the setting-up of an asset management company related to the appropriate transfer price, the type of loans to be transferred and the governance of the asset management company involving ownership and funding structure as well as correct incentives for its managers. Alternatively, doing nothing and leaving the impaired assets on the balance sheet of the banks, in the hope that the situation of the real estate market and of the financial sector improves and leads to a natural resorption of the stock of non-performing loans, will rarely solve anything, and will usually result into a protracted recession and a delayed recovery. The large stock of non-performing loans continues to threaten financial stability as long as it remains unaddressed. If carefully designed, the asset management company can play a key role in the stabilisation of the financial system and in the recovery of the economy.

5. IMPROVING REGULATION AND SUPERVISION

The financial crisis has brought to the fore several weaknesses and gaps in the supervisory frameworks of the financial sectors of countries receiving multilateral financial assistance. In these countries, the financial and economic downturn has underpinned the need to strengthen the effectiveness of supervisory action by improving the regulatory framework for credit institutions and other financial intermediaries. Therefore, regarding the conditions aimed at improving the supervision of the financial sector, an important role has been played by the strengthening of the prudential framework for the banking and non-bank financial sector as well as enhancing the capacity of supervisors, including through more specialised staff, to supervise the financial sector. In the euro area countries these measures were taken against the background of the establishment of the Single Supervisory Mechanism of which the contours were not known, making therefore the formulation of policy recommendations more complex.

5.1. ENHANCEMENT OF SUPERVISORY CAPACITY

In several programme countries, measures were taken to enhance the supervisory capacity including through changes in the organisation of supervision. Most of these changes pinpoint to the tendency of enhancing the role of central banks in supervisory activities beyond the supervision of the banking sector.

In Hungary, the Hungarian Financial Supervisory Authority (HFSA),([1]) the single financial market regulator, strengthened its consumer protection arm and enhanced on-site inspections, in particular by increasing the frequency of these inspections and by focusing on credit risk and loan-loss provisioning. Furthermore, the oversight of insurance intermediaries and credit brokers was also tightened.

([1]) Hungary adopted in 2013 an integrated model of financial sector supervision, which entailed the integration of the Hungarian Financial Supervisory Authority into the Central Bank of Hungary. In 2010, before the integration process, the Hungarian Financial Supervisory Authority was upgraded to an autonomous institution reporting directly to Parliament.

In Romania, following the decision to merge the sectoral supervisors of the non-bank financial sector (securities and investment funds, insurance and pensions) into a single supervisory authority (Financial Supervisory Authority) in 2012, several measures to align the non-bank regulator to international best practices appeared warranted. These measures included *inter alia*, the reduction in the number of board members of the Financial Supervisory Authority, strengthening their professional experience requirements and the reduction in the total number of staff to reduce supervisory costs for supervised entities.

In Ireland, banking sector supervision was further enhanced by an increase in staffing levels and budget allocations in line with OECD best practices. In Greece, insurance supervision previously in the remit of the Private Insurance Supervisory Committee, a legal entity subordinated to the Ministry of Finance, was integrated in the Bank of Greece in 2010. In Cyprus, the supervision of the cooperative banks was detached from the Ministry of Commerce, Trade and Tourism and integrated into the Central Bank of Cyprus with increased resources.

In Spain, several measures were taken to strengthen the independence and supervisory procedures of the banking supervisor (i.e. the Central Bank of Spain). To enhance the operational independence of the banking supervisor, the financial sector policy conditionality in the Memorandum of Understanding concluded in the framework of the Spanish Financial Sector Programme established the transfer of some key competences regarding the supervision of banks from the Ministry of Economy and Finance to the Central Bank of Spain. These competences include the licensing and the authority to impose sanctions on credit institutions for very serious infringements of banking law. Furthermore, the powers of the banking supervisor to issue guidelines and interpretations were also enhanced. First, the powers of the Central Bank of Spain to issue binding guidelines and interpretations were reinforced and it also received the competence to issue binding replies to queries. The binding nature of these replies to queries enhanced legal certainty and consistency. Second, the Spanish authorities prepared a report in the second half of 2012, which

included the main findings of an internal review of the Central Bank of Spain and formulated proposals to strengthen the supervisory procedures of the bank supervisor. The report included *inter alia* recommendations to further enhance on-site inspections and the off-site monitoring of credit institutions as well as improvements in the formalisation of supervisory actions.

In Portugal, as part of the efforts to improve banking supervision, the Central Bank of Portugal increased the resources available for the recruitment of bank supervisor and intensified on-site inspections and verification of data accuracy. In the second half of 2011 a Special On-site Inspection Programme was performed on the eight largest Portuguese banking groups (representing more than 80% of total banking sector assets), which were included the stress testing capacity of the Portuguese banking sector. The aim of the Special On-site Inspection Programme was to review the book value of the banks' assets and risk-weighted assets. Furthermore, the Central Bank of Portugal performed a targeted on-site inspection programme, focused on the large exposures of banks as well as on the real estate and construction sectors and included its findings into the recommendations stemming from the Special On-site Inspection Programme.

5.2. STRENGHENING OF PRUDENTIAL AND REGULATORY FRAMEWORK

5.2.1. Non-performing loans and loan-loss provisioning requirements

In several programme countries, extensive work was undertaken to strengthen existing definitions of non-performing loans, the valuation of bank collateral and of loan-loss provisioning requirements.

Notwithstanding the differences in the definition of non-performing loans across countries and the difficulties of reliable cross-country comparisons, the non-performing loans definitions used in several countries receiving multilateral financial assistance (i.e. before the introduction of the European Bank Authority definition of non-performing exposures), in particular, in Portugal and Cyprus, revealed a pronounced downward bias. The non-performing loans definition used in Portugal before September 2011 covered only the overdue part of the loans in arrears, which resulted in an underestimation of asset impairments both at individual bank and system level. In line with the requirements of the assistance programme for Portugal, the disclosure of non-performing loans was further strengthened. The disclosure on non-performing loans was improved by adding a new ratio aligned with international practices based on the definition used in the IMF's Compilation Guide on Financial Soundness Indicators.

Non-performing loans are weighing on bank profitability and need to be properly monitored and managed in order to safeguard the capital buffers of banks. In Cyprus, not enough attention was given to loans in arrears fully covered by collateral as well as to restructured facilities. New definitions entered into force 1 July 2013. A non-performing credit facility was defined as: (i) having overdue payments of more than 90 days, or (ii) a restructured loan which at the time of restructuring was classified as non-performing, or presented arrears of more than 60 days. A restructured loan could migrate back to the performing loans category only after an observation period of a year. These new provisions also introduced general principles on impairment and income recognition. Furthermore, time series for non-performing loans were published including historical observations reaching as far back as possible.

In 2011, the Central Bank of Ireland introduced new guidelines on loan-loss provisioning, collateral valuation and disclosures. The principal objectives of the impairment provisioning guidelines were to induce banks to: (i) recognise their incurred loan losses as early as possible within the scope of international financial reporting standards; and (ii) adopt a more consistent and conservative approach to the measurement of impairment provisions across all loan portfolios. The low values of collateral used to guarantee the risk exposures of banks were identified as one of the main sources of bank losses. The new measures put emphasis on the banks' role in the valuation of collateral. To foster more independent valuation, a register of appraisal companies was also established. Similarly in Cyprus, the loan origination directive was issued end-2013 and guidelines for asset impairment and provisioning in 2014. Banks were requested to submit an action plan for the full implementation

of these guidelines starting from their 2014 annual accounts.

Although the Spanish dynamic provisioning framework was very comprehensive and demanding, the rapid increase in non-performing loans during the crisis and the length of the crisis has depleted existing impairment buffers and forced the Spanish authorities to increase loan-loss provisions for certain exposures (mainly real estate and construction) in 2011 and early 2012. In the Memorandum of Understanding, the Spanish authorities were requested to make proposals to revamp the permanent framework for loan-loss provisioning by exploring *inter alia* the possibility to revise the dynamic loan loss provisioning framework([1]) on the basis of the experience gathered during the financial crisis.

5.2.2. Restructured loans

In several programme countries, the banking supervisors had insufficient information on the restructured loan portfolios of banks as well as on the restructuring options provided by banks to clients. In line with programme commitments, the Central Bank of Spain approved in the third quarter of 2012 more stringent disclosure requirements for banks regarding restructured loans. The enhanced requirements provided for: (i) disclosure of risk exposures by business segments and geographical areas; (ii) disclosure of the probability of default on restructured and refinanced loans by the credit institutions which were authorised to use internal models for the calculation of capital requirements; (iii) classification of all asset classes (including restructured and refinanced loans) according to loan-to-value intervals (i.e. loan-to-value ratios less than 50%, between 51% and 60%, between 61 – 80%, over 81%); (iv) disclosure of refinanced and restructured operations by differentiating among performing, substandard and non-performing loans; (v) disclosure by banks in their annual reports of a short summary of their restructuring and refinancing policies as well as of an explanation on the criteria used to assess the sustainability of the applied forbearance measures.

Similar provisions on restructured loans and their disclosure were introduced in Ireland. In Romania, authorities committed as part of the financial sector policy conditionality for the second balance of payments programme to closely monitor bank practices to avoid ever-greening as well as the assessment of credit risk of restructured loans, so that they remain prudent and in line with good international practices. From end-September 2013, authorities started to collect, on quarterly basis, more granular supervisory data on restructured loans, including loans to state-owned enterprises.

5.2.3. Liquidity

The enhancement of the liquidity regulation constituted one of the main improvements of the prudential framework in Latvia, Cyprus and Romania. In Latvia, authorities committed in the framework of the balance of payments assistance to strengthened the assessment of liquidity risk. The amended liquidity risk regulation, which entered into force in April 2010, put emphasis on the funding risks stemming from liability concentration and short-term wholesale funding.

In the context of the first balance of payments assistance package, the Romanian bank supervisor revised in 2010 the liquidity regulation for credit institutions and included enhanced reporting requirements for liquidity ratios across different currencies. In Cyprus, the absence of concentration limits in the liquidity framework for euro-denominated assets allowed the increase in the exposure of Cypriot banks to Greek sovereign debt. The liquidity regulation was revised in 2014 in order to avoid similar situations in the future (European Banking Authority, 2013).

5.2.4. Credit register

The availability of appropriate data on the credit history of borrowers is of outmost importance both for supervisors and banks. Ireland, Portugal, Spain and Cyprus adopted measures aimed at enhancing

([1]) Dynamic provisioning is a macro-prudential tool, which helps address pro-cyclicality issues in banking. By allowing the early identification and coverage of credit impairments in loan portfolios, dynamic provisioning enables credit institutions to build up loss absorbing buffers (i.e. loan loss provisions) in good times, which can then be used in periods of economic downturn. However, a protracted period of economic downturn can lead to a serious erosion of the stock of loan-loss impairments, as it was the case in Spain.

the existing credit registries. In Ireland, a Central Credit Register was set up in 2013 following commitments under the Irish economic adjustment programme. In September 2016, the Central Bank of Ireland published regulations governing the operation of this register. The regulations provide that the collection of loan data will be implemented gradually in two phases, with Phase 1 focusing on lending to consumers, and Phase 2 focusing on lending to businesses. Data submissions by lenders for Phase 1 will start from end-June 2017 with all lenders required to submit data by end-December 2017.

In Portugal, the Central Credit Registry was upgraded to enhance the granularity and coverage of data. Following the introduced changes, the Central Credit Registry database was enriched with granular information on loan maturity brackets, non-performing loans (including the identification of overdue and written-off loans disputed in courts and the type of collateral for these loans) and restructured loans. Furthermore, the introduced changes enabled the enlargement of the set of financial products reported through the Central Credit Registry and the broadening of data access.

In Spain, in line with the conditionality of the Spanish Financial Sector Programme, authorities adopted several enhancements of the public credit register to address, for instance, the insufficient information available on the type of collateral of each exposure and on risk concentrations stemming from indirect risk exposures and inter-linkages between counterparties. In line with commitments under the Memorandum of Understanding, Cyprus set up a Central Credit Register for both credit institutions and cooperative credit institutions covering all borrowers, which before were separate for the two types of credit institutions. In 2015, the Central Credit Register was fully operational for credit assessment purposes. The Central Bank of Cyprus also aims to use it for supervisory and macro-prudential purposes. The data available in the register will be further expanded, with a view to facilitate the assessment of risk and credit supply decisions.

5.2.5. Banking sector capitalisation

In order to strengthen the capitalisation of the banking sector with a view of increasing the loss absorption capacity of banks, several programme countries decided to increase the capital requirements for banks beyond the requirements of the EU capital requirements directive. Ireland increased the core tier1 ratio from 8% at the beginning of the economic adjustment programme (end of 2010) to 10.5%. In Portugal, total capital requirements were increased gradually from 8% at the beginning of the economic adjustment programme (May 2011) to 9% at the end of 2011 and further to 10% at the end of 2012. As of 31 December 2012, Spain required credit institutions to meet until at least end-2014 a common equity tier1 ratio of at least 9%.

The higher capital requirements were coupled with a more conservative definition of capital. The definition of capital used was based on that of eligible capital established in the 2011 EBA recapitalisation exercise. Furthermore, from 1 January 2013, institutions had to apply the definition of capital established in the EU Capital Requirements Regulation, observing the foreseen gradual phase-in period. In Romania, no amendments to the prudential regulation were made during the programme period, but banks committed on a voluntary basis to maintain capital buffers higher than the regulatory minima (i.e. a minimum capital adequacy ratio of 10%).

5.2.6. Balance sheet cleaning-up and disposal of impaired loans

In several programme countries, the rapid deterioration in asset quality entailed an enhanced oversight of impaired portfolios. In December 2012, the Spanish banking supervisor requested the largest Spanish banking groups to review, prepare and implement strategies for dealing with impaired assets. The review of these strategies was performed by the internal audit departments of banks and the main findings were included in a report submitted to the banking supervisor. The report also included a plan with measures for addressing the identified shortcomings. One of the main shortcomings identified by banks was related to the reporting systems, which reflect the complexity of arrears management. Banks had to implement the measures aimed at improving their strategies and policies to deal with impaired assets by end-September 2013, except for some IT improvements which had to be made by end-December 2013.

In 2013, the Romanian banking supervisor performed a comprehensive analysis of the asset quality in the banking sector and produced a report containing granular, migration matrices and vintage analysis of impaired assets in the banking sector. Similar reports were subsequently prepared in 2014 and 2015. Furthermore, in the third quarter of 2013 and first quarter of 2014, the banking supervisor performed on-site inspections on a selected sample of 20 large, medium and small sized banks, which focused on the strategies of banks to deal with impaired assets. These on-site inspections focused primarily on: (i) the adequacy of IT systems to deal with impaired assets; (ii) the work-out strategies for non-performing loans used by banks; and (iii) the restructuring/rescheduling policies applied by banks.

5.2.7. Sectoral risk concentration

In Spain, the significant exposure of the banking sector to the real estate and construction sector required an enhancement of the prudential treatment of concentration risk. The binding Pillar I requirements did not sufficiently address the problems related to the concentration of bank lending in certain sectors or geographical areas. Furthermore, the measures taken by the bank supervisor under Pillar II ([1]) before the financial crisis to reduce sectoral and geographical concentration did not prove sufficiently effective. Based on the commitments in the Memorandum of Understanding the Spanish authorities reassessed the regulatory framework for risk concentration and strengthened the supervisory oversight of concentration risk.

Following an in-depth analysis of concentration risk including also the assessment of prudential measures adopted in other countries to tackle excessive sectoral concentration, the Central Bank of Spain recalibrated the capital surcharges under Pillar II for sectoral risk concentration. According to the results of a retrospective simulation performed by the bank supervisor on a sample of 30 banks, in the absence of prudent macroeconomic policies, there is no level of capital surcharges that could have stopped the level of sectoral concentration like the one on the construction sector. The formalisation of the methodology for the calibration of capital surcharges under Pillar II took place in October 2013 and was applied as of 2014.

5.3. TARGETS FOR NON PERFORMING LOANS

The reduction of loans in arrears has been an essential part of the economic adjustment programmes in Ireland, Cyprus and in Greece, where non-performing loans reached a peak at 22.8% in 2013, 52.7% in 2014 and at 39.3% in 2016, respectively. Bad debts have been tackled through various measures, including enhancing supervision and regulation, transferring them to asset management companies and modernising the insolvency framework. This section zooms in on setting targets for loan restructuring in Ireland, Cyprus and Greece.

The scope of the targeting system depends on the structure of the non-performing loan portfolio (Table II.5.1). In Ireland the bulk of the problematic loans were from the real estate segment and thus were the focus of the targeting framework. In Cyprus and Greece, the prolonged recession and a debtor-friendly legislative environment caused bad loans to rise across all economic sectors.

The targeting principle has been first introduced under the Irish economic adjustment programme where the supervisory authorities introduced Mortgage Arrears Resolution Targets in 2013. The main six banks were required to meet quarterly targets on offered and concluded restructuring solutions for customers in mortgage arrears as well as terms being met.

A comparable approach has been implemented under the Programme in Cyprus in 2015. Besides the three Irish targets, the Cypriot banks were requested to report also on an early arrears cure rate. The target aims at spurring a proactive role of banks by comparing the share of loans that presented arrears between 30 and 90 days at the beginning and end of the quarter.

([1]) Pillar II measures are directed at individual banks and are institution specific based on their risk profile and business model in contrast to Pillar I measures which are the same for all banks.

Table II.5.1: **Targets for non-performing loans in Ireland, Cyprus and Greece: overview**

		Ireland	Cyprus	Greece
Timing	Start (NPLs)	2013Q2 (22.4%)	2015 Q2 (37.9%)	2016 Q2 (38.8%)
	End (NPLs)	2014Q4 (19.2%), afterwards bank-specific follow-up	Ongoing	Ongoing
	NPLs mid-2016	14.4%	39.0%	2016 Q2 (38.8%)
Coverage	Banks	ACC Bank, Allied Irish Bank, KBC Bank Ireland plc, Permanent Tsb, Bank of Ireland, Ulster Bank Ireland	All local banks	The four largest domestic banks
	NPLs	Personal and commercial mortgages, 90 dpd (75% of total NPLs)	All loans 90 dpd (30-90 dpd for cure rate)	All loans NPLs (90 dpd) and NPEs (unlikely to be repaid), detailed by economic segments
	Scope	Sustainable solutions (likely repayment or repossession)	Sustainable solutions (likely repayment; foreclosure explicitly excluded)	Result oriented targets (NPLs, NPEs), action oriented targets and sustainable solutions
Targets	Calibration	Top down	Two-quarter rolling bottom up target setting	Bottom up target setting by banks
	Control	Regular quarterly reporting, monitoring and supervisory action if needed	Regular quarterly reporting, monitoring and supervisory action if needed	Regular quarterly reporting, monitoring and supervisory challenge
	Proposed sustainable solutions	20% to 85% in 2013Q2 to 2014Q4 Realisation: 77% to about 90% in 2014	(not cumulative) 9.4% to 14.4% in 2015Q3 to 2016Q2 Realisation: 6.3% (2015Q3) to 13.3% (2015Q4)	None
	Concluded sustainable solutions	25% to 45% in 2014Q1 to 2014Q4 Realisation: 34% to about 55%	(not cumulative) 7.5% to 14.9% in 2015Q3 to 2016Q2 Realisation: 6.5% (2015Q3) to 13.0% (2015Q4)	15%-23% Q2 2016 to 31%-60% in 2019 depending on the bank Ongoing
	Terms being met	75% (2014Q1-Q4) Realisation: 91%	(no payment overdue longer than 7 days) 66.5% to 71.6% in 2015Q3 to 2016Q Realisation: 68.2% (2015Q3) to 69.9% (2015Q4)	None
	Early arrears cure rate	None	27.8% to 43.8% in 2015Q3 to 2016Q2 Realisation: 31.2% (2015Q3) to 38.6% (2015Q4)	See "Additional monitoring"
Additional monitoring	Key Performance Indicators (published)	Mortgage arrears 90 dpd; early arrears up to 90 d; stock of restructured loans; new restructurings; performance of existing restructurings	For banks under restructuring only: Bank of Cyprus / Cooperative Banks (incl. target for 2017/18): Coverage ratio (40-50% / >50%), Cost of risk (<1% / <2%), 90 days past due in EUR (<10bn / <4.5bn)	Cash recoveries, collateral liquidations, debt-to-equity swaps, sales of NPEs, quarterly flow from performing to NPEs and vice versa, early arrears cure rate, NPLs with legal action (not published)
	Institution-specific (not published)	Early arrears managment and operational efficiency	Detailed portfolio-specific targets and reporting	All targetting is institution specific
Documentation		Central Bank publication	Central Bank announcements	None

Actual data for non-performing loans ratio are based on latest definition
Source: Bank of Greece, Central bank of Cyprus, Central bank of Ireland

While in Ireland and Cyprus the targets were formulated in terms of restructuring non-performing loans, in Greece the focus is on the overall reduction of non-performing loans. The targeting system was introduced in 2016, as part of the third economic adjustment programme and is more detailed but less information is published. In Greece, targets are set at a granular level for consumer, residential, business, small and medium-sized enterprises, corporate and shipping loans. Furthermore, the targeting system is split into three major categories: (1) result oriented operational targets (non-performing loans, non-performing exposures), (2) action oriented operational targets (loans with legal actions, going concern after viability assessment, large corporates with common borrowers, corporates with a specialist for restructuring), and (3) concluded sustainable solutions similar to the Irish and Cypriot system.

Concerning governance, in Ireland, the supervisor conducts periodical audit performances and can impose regulatory action including additional capital requirements for banks that fail to meet targets. In the Cypriot system, banks need to explain why targets are missed, but supervisory action is possible under Pillar II requirements. In Greece the targeting project has just started in the second quarter of 2016 and the supervisory actions have not yet been precisely determined. It is difficult to point at the impact from the targeting framework or the possibility to sell bad loans, as there are various drivers of non-performing loans. Nevertheless, as the experience of Ireland shows these tools appear to have their place. The country realised well its targets (Table II.5.1) and more importantly the overall non-performing loan rate has been reduced to 14.4% by mid-2016. It should be noted, however, that a large part of bad loans have been carved out and transferred to the National Asset Management Agency before the targeting was set up.

For Cyprus, after a few submissions, banks underperformed the targets in terms of sustainable restructurings, but there was some progress relative to the start of the framework. At the same time, they exceeded the target for terms being met and the early cure rate. Non-performing loans remain high, though. Similarly for Greece, where it is too early to make an assessment as the targeting system just started.

Table II.5.2: **Law on the sales of loans in Cyprus and Greece: overview**

	Cyprus	Greece
Adoption	November 2015	December 2015 (amendment in June 2
Scope	Loans below EUR 1 million to individuals and SMEs	All loans (except backed by primary residence below EUR 140 000 until end-2017); regulation of servicing companies
Not regulated	Big loans; loans to non-residents, outside Cyprus, governed by foreign law; servicing companies	
Authorised institutions	Banks registered in Cyprus or the EU; non-bank credit aquiring companies with license	Institutions registered in Greece or the European Economic Area
Estblishment	Required for non-banks	Required for institutions from third countries and debt service companies
Regulatory capital	EUR 100 000	EUR 100 000
Supervision	On ongoing basis by Central bank; semi-annual report on sale of loans	On ongoing basis by Central bank; together with Capital Market Commission decision on data to be published.
Information to borrower	Official Gazette and 3 newspapers or by letter; borrower has 45 days to purchase the loan but not binding for creditor.	Discussion of restructuring offer 12 months before sale; in case of refusal by borrower, the sale proceeds
Documentation	Central Bank publication	Greek Legislation on NPLs servicing and transfer

Source: Bank of Greece, Central bank of Cyprus

5.4. LEGISLATION ON SALES OF NON-PERFORMING LOANS

Another tool for reducing non-performing loans is the establishment of a market for loans. In Cyprus and Greece the adoption of law making this possible has been a prominent requirement under the economic adjustment programme, whereas in other countries such a requirement was not necessary as a market for loans existed.

The two legislations were adopted in late 2015 (Table II.5.2). With a view to protect small borrowers, the Cypriot law regulates the sales of loans below EUR 1 million to individuals and SMEs, while loans above that amount are essentially free to be sold. In Greece all categories of loans are free except mortgaged primary residence up to EUR 140 000 until end-2017.

There is an establishment requirement for non-banks (e.g. specialised distressed asset managing companies) wanting to buy non-performing loans, while in Greece such requirement is only made for the servicing companies and not for buyers of loans.

In both countries exists an obligation to inform the borrower. Cyprus imposes the creditor to publicly announce or bilaterally inform the borrower of its intentions and offer him 45 days to purchase the loan. Yet, the offer is not binding for the creditor. In Greece a restructuring offer has to be made 12 months prior to the intended sale. This rule is mitigated by the several restructuring offers in the pipeline before the law was passed, shortening considerable period before a sale can take place.

The environment for selling non-performing loans is heavily regulated in both countries, justified on prudential and social grounds. In Cyprus, given the division of the island, there is the additional concern that foreigners from outside the EU may purchase the real estate underlying the non-performing loans. The laws have so far hardly been used and it remains to be seen how they will contribute to the reduction of the high level of bad loans in the two countries. A functioning secondary market for non-performing loans requires also independent debt servicers and efficient insolvency and foreclosure frameworks, which the economic adjustment programme addressed, but making use of these new possibilities remain hesitant.

6. AVOIDING CONTAGION

Spill-over and contagion is a particular concern in the well-integrated European economy. Whereas in normal circumstances financial and economic interconnectedness is beneficial, as innovations and favourable developments are exported and reinforced to the benefit of all, in a crisis situation the opposite may happen. Adverse shocks and mistrust are then easily propagated through the system.

Tackling interdependence is a systemic issue which should be mainly dealt with at the level of the functioning of the overall system and the European Union has taken action. In this context, the creation of the Single Supervisory Mechanism, the European Stability Mechanism, the Single Resolution Mechanism, among other, can be mentioned as well as the continuously enlarged framework through which the European Central Bank provides liquidity to banks. Some specific issues, however, were dealt with at regional or country level and these are the main focus of this chapter.

First, attention will be paid to the Vienna Initiative which was launched to encourage parent banks to remain engaged in the crisis countries of Central and Eastern Europe where their subsidiaries/branches were located. Second, the nexus Cyprus-Greece will be analysed and the manner in which potential contagion from the bail-in of depositors in Cyprus was dealt with by carving out the Greek branches of the Cypriot banks.

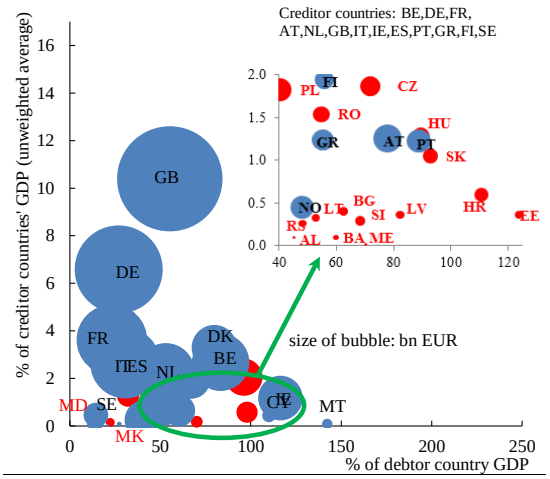
6.1. THE VIENNA INITIATIVE

Initially, the Vienna Initiative focused on maintaining exposure to countries benefiting from Balance of Payments support and providing capital support to the subsidiaries of euro area banks operating in these countries. Later it evolved into a platform for home and host supervisory cooperation in euro and non-euro area countries, with focus on Central, Eastern and South-Eastern Europe. In this context, the Nordic model for supervisory cooperation will be analysed as well as the determined Lithuanian approach to swiftly resolve ailing banks. First, however, the exposure of some countries' banks to Central and Eastern Europe is put into perspective.

6.1.1. Exposure to Central and Eastern Europe into perspective

The importance of exposure to Central and Eastern Europe is very different depending from the angle that one takes to look at it. This asymmetry can be significant in times of crises, like in 2008, when the host countries were particularly dependent on foreign finance, while the banks in the home countries were increasingly less willing to grant it mainly because of risk aversion. Furthermore, there were also not enough incentives for the management of euro area banks to pay attention to small balance sheet items. From the perspective of the countries in Central and Eastern Europe, the claims of the creditor banks represented a large share of their GDP, between 60% and 120%, while in terms of GDP of the country where the creditor banks are located, the level was negligible, less than 2% (Graph II.6.1, small insert). It follows that the inflows received, be it in the form of parent funding of subsidiaries, direct lending or bank holdings of securities were very important for the countries of Central and Eastern Europe, while for the originating banks this exposure was minimal.

Graph II.6.1: **Importance of international exposure in some EU Member States and its neighbours, December 2008**



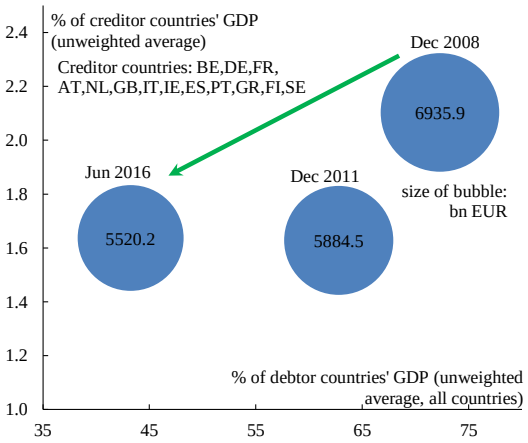
Source: Bank for International Settlements

The asymmetry in the relative importance of cross-border exposure is a particular issue for Central and Eastern Europe. For the big countries in the EU, first, the relative exposure in terms of GDP of the debtor countries was somewhat lower (Graph II.6.1) and second, more significant, the average

exposure in terms of GDP of the creditor countries was higher. It is evidence of the bigger two-way exposure, reflecting the deeper financial integration among some EU Member States. A case in point is the United Kingdom, for which the cross border liabilities towards banks represented about 70% of its GDP in 2008, while it was on average 16% of GDP in the countries that lend to the United Kingdom.

Since the outbreak of the crisis in 2008 the cross-border exposure of international banks has decreased considerably, in all three dimensions: in absolute amounts, in terms of GDP of the counties where the banks are located and in terms of GDP of the recipient countries (Graph II.6.2). The background to this trend is the increased home bias linked to risk aversion (European Commission, 2015a, p 118 in "European Financial Stability and Integration Report").

Graph II.6.2: **Development in international exposure in some EU Member States and its neighbours through the crisis**



Source: Bank for International Settlements

6.1.2. Vienna 1.0: maintaining exposure

The Vienna Initiative 1.0 was launched in January 2009, at the height of the financial crisis which impacted more markedly several countries in Central, Eastern and South-Eastern Europe (i.e. Hungary, Latvia, Romania, Serbia, Bosnia and Herzegovina) and which benefitted from multilateral financial assistance from the EU and the international financial institutions (IMF, World Bank Group, European Investment Bank, European Bank for Reconstruction and Development).

Established as a public-private cooperative action platform (gathering representatives of the home country authorities, European Commission, international financial institutions and private banks), Vienna Initiative 1.0 aimed at preventing a "run to the exit" of the EU parent banks operating in the countries in Central, Eastern and South-Eastern Europe benefitting from multilateral financial assistance and maintaining their involvement in these countries. A sudden capital outflow due to a large-scale and uncoordinated withdrawal strategy by the EU parent banks would have led to a full-blown balance of payments crisis with severe consequences for these countries, especially for those which were hard hit by recession. Furthermore, another initial objective of the Vienna Initiative 1.0 was to agree upon, and implement, crisis management principles in the region.

The private sector involvement was an important flanking measure to the financial assistance granted by the EU and the international financial institutions to Hungary, Latvia, Romania, Serbia and Bosnia and Herzegovina. In the context of the Vienna Initiative 1.0, the parent banks of the largest foreign-owned EU banks operating in these five countries have committed, on voluntary basis, to maintain exposure to these countries and provide sufficient capital buffers to their subsidiaries, as needed. In turn, host countries authorities have committed to continue the efforts of macroeconomic stabilisation and provide investment opportunities to facilitate the fulfilment of exposure commitments by banks.

The EU parent banks operating in the countries receiving financial assistance agreed through general or bilateral commitments to maintain their exposure to these five countries and provide capital support to their affiliates, as needed. In the case of Latvia, no bilateral commitment letters were signed, but only a general commitment to maintain exposure to the country and promote financial stability in the Baltic region. In the absence of bilateral commitment letters, there were no specific reporting requirements for the participating banks regarding the maintenance of their exposure to Latvia. The Central Bank of Latvia monitored data on the net external liabilities

Table II.6.1: **Overview of country-specific exposure commitments and bilateral country meetings**

Kick-off meetings (press release)	Joint declaration			Bilateral letters (not public)			
	Number of banks	Date	Place	Date	Place	Reference date for exposure	roll-over rate
Hungary	6	20.5.2009	Brussels	19.11.2009	Brussels	Sep-08	95%
Latvia	4	14.9.209	Stockholm	no (but vaguer letters of comfort were signed)			
Romania	9	26.3.2009	Vienna	19.5.2009	Brussels	Mar-09	100%
Bosnia Herzegovina	6	22.6.2009	Vienna	na		Dec-08	100%
Serbia	10	27.3.2009	Vienna	na		Dec-08	100%

Follow-up meetings (press release)	Number of banks	Date	Place	Main results	roll-over rate
Romania	9	18.11.2009	Brussels	No change in commitments	100%
Bosnia Herzegovina	6	26.2.2010	Vienna	No change in commitments	100%
Serbia	10	26.2.2010	Vienna	Change in exposure commitment from 1.4.2010 (reference date unchanged)	80%
Hungary*	6	22.07.2010	Brussels	No change in commitments	95%
Romania	9	22.07.2010	Brussels	Change in exposure commitment from 1.10.2010 (reference date unchanged)	95%
Romania	9	16.3.2011	Brussels	In line with precautionary programme, looser exposure commitment	none

*The Hungarian programme ended in November 2010 and also the exposure commitments
Source: European Commission

of the Latvian subsidiaries to the parent banks ([1]) which signed the general commitment to maintain exposure to Latvia

The EU parent banks signed bilateral commitment letters ([2]) to maintain their exposure to Hungary, Romania, Serbia and Bosnia and Herzegovina as compared to a country specific reference date. In the bilateral commitment letters of the parent banks regarding their subsidiaries operating in Romania, Serbia and Bosnia and Herzegovina exposure was defined as: *(i)* outstanding balances on all loans and other debt instruments owed by entities in these countries minus balances owed by the parent to financial institutions in these countries; *(ii)* parent's deposits with financial institutions in these countries less deposits of financial institutions with the parent; and *(iii)* all forms of capital by the parent to the subsidiary, including subordinated debt and hybrid instruments. In the case of Hungary, only the balances owed by the parent bank to the subsidiary were subtracted.

The bilateral commitment letters included an exposure roll-over rate of 100% as compared to the reference date for Romania, Serbia and Bosnia and Herzegovina, and, of 95% for Hungary. The participating banks provided on a regular basis data on the fulfilment of their exposure commitments, which were closely monitored by the home country banking supervisors. The maintenance of exposure commitments and the measures taken by the home country authorities to facilitate the fulfilment of these exposure commitments were further assessed in the framework of country-specific meetings, which took place at least once per year (Table II.6.1), and the Full Forum meetings of the Vienna Initiative I. These Full Forum meetings were organised once per year, mainly in Brussels.

According to the bilateral commitment letters signed by the parent banks involved in Hungary, Romania, Serbia as well as in Bosnia and Herzegovina, the exposure and capital commitments were supposed to cease at the end of the economic adjustment programmes. In the case of Hungary, following the end of the balance of payments programme in November 2010, parent banks were no longer bound by exposure and capital commitments. As regards Romania, the first balance of payments programme (which ended in May 2011) was followed by a new two-year precautionary programme (2011–2013) with contingent financial support. Although there were

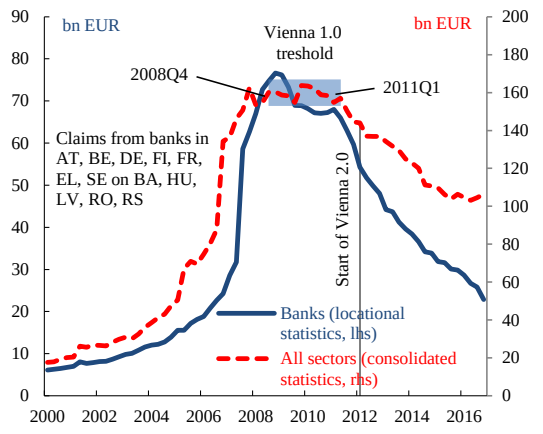
([1]) The four banks were Bank DnB NORD A/S, Nordea Bank Finland Plc, Swedbank AB and Skandinaviska Enskilda Banken AB,.

([2]) The EU parent banks, which signed bilateral commitment letters, are: Erste Bank Group, Raiffeisen International, Volksbank, Hypo Alpe Adria, Unicredit, Intesa SanPaolo, Societe Generale, KBC Group, Bayerische Landesbank, NLB, Alpha Bank, National Bank of Greece, EFG Eurobank and Piraeus Bank.

no exposure commitments under the second programme, parent banks committed to continue to maintain their subsidiaries operating in Romania well-capitalised (i.e. solvency levels above 10%).

Based on exposure data submitted by the banks to the host country supervisors, the highest exposure roll-over rate compared to the reference data was in Hungary (i.e. 125%, data as of March 2011) and the lowest in Latvia (88%). Despite sizeable differences concerning the fulfilment of the bilateral or general exposure commitments, parent banks have broadly maintained their overall exposure to these countries (Graph II.6.3) and provided the necessary funding to their subsidiaries throughout the multilateral assistance programmes. The orderly deleveraging of the parent banks towards their subsidiaries offered breathing space for mobilising local savings and contributed to maintaining exposure levels (compare claims on banks and on all sectors in Graph II.6.3). The responsible behaviour of parent banks has played a key role in maintaining macro financial stability and helping avert a systemic crisis in these countries.

Graph II.6.3: **Vienna Initiative 1.0: maintaining exposure**



Source: Bank for International Settlements

As a public-private cooperative action platform, the Vienna Initiative 1.0 has proved to be a useful crisis management tool (De Haas *et al.*, 2015) due to its unique composition of European Commission, international financial institutions, home and host banking sector supervisors as well as national authorities (i.e. ministries of finance) and commercial banks. In its first phase, the Initiative has built relationships that have provided a good basis to address macro financial stability challenges in the new EU Member States and Western Balkan countries receiving multilateral financial assistance.

6.1.3. Vienna 2.0: fostering home-host cooperation between supervisors

The sovereign debt crisis in the euro area and the protracted economic slowdown prompted a second wave of reduction of foreign bank exposure to Central, East and South East Europe. In the second half of 2011 only, the aggregated exposure of European banking groups to their partners in the Vienna Initiative dropped by 10% (Graph II.6.3). In this context, in January 2012 the Vienna Initiative was re-launched as a coordination platform for home-host banking issues in emerging Europe. According to its mission statement([1]), the objectives of the Vienna Initiative 2.0 were to help avoid disorderly deleveraging, ensure that potential cross-border financial stability issues are resolved and achieve policy actions, notably in the supervisory area, that are taken in the best joint interest of home and host countries.

Differently to the original set-up, the Vienna Initiative 2.0 established a more formal institutional structure. Marek Belka, the Governor of the National Bank of Poland, assumed the role of Chairman. From 2012 he chaired a Steering Committee including the European Bank for Reconstruction and Development, European Investment Bank, International Monetary Fund, World Bank, European Commission as well as representatives of home and host country authorities and commercial banks. The European Bank for Reconstruction and Development provided the Initiative's secretariat. The central banks of Italy and Romania were the first national authorities represented in the Steering Committee for a term of 1.5 years. In early 2014, they were replaced by the central banks of Austria and Croatia. In April 2013, the central bank of Albania joined the Steering Committee as a representative of non-EU countries and was replaced by the central bank of Macedonia in November 2014. In July 2013, participation in the Steering Committee was extended to commercial banks upon their request. Raiffeisen Bank International, UniCredit

([1]) Available at www.vienna-initiative.com

and Eurobank represented the participating banking groups, including also Erste Group, Intesa SanPaolo, KBC Group, Alpha Bank, BNP Paribas, National Bank of Greece, OTP, Piraeus Bank and Societe Generale.

From the outset, Vienna 2.0 expanded the scope of its involvement beyond strictly monitoring the credit and deleveraging trends between the Western parent banks and their Eastern subsidiaries([1]). In addition, Vienna 2.0 launched its own bank survey on credit demand and supply conditions in Central, East and South East Europe, including present and forward looking assessment of the relevant factors([2]).

It also provided observations from the perspective of countries in Central, East and South East Europe on the key pillars of the Banking Union (Berglöf *et al.*, 2012): the Single Supervisory Mechanism and the Single Resolution Mechanism, as their shaping-up coincided with the setting-up of Vienna 2.0. After the launch of the Single Supervisory Mechanism and Single Resolution Mechanism, the Vienna Initiative advocated interests and coordinated actions of non-EU countries in the Western Balkans, leading towards the signing of a Memorandum of Understanding between those countries and the European Banking Authority in October 2015.

From 2014, the Vienna 2.0 also assisted reforms of the banking sector in Ukraine through the multilateral Ukraine Financial Forum for local bank subsidiaries, authorities and international institutions. The forum was based on the model of host-country cross-border banking fora, held previously in Hungary, Croatia, Serbia, Albania, Montenegro and Slovenia.

As the crisis left many countries of the region with a large stock of non-performing loans, hampering banks' ability to lend, in September 2014 the Vienna Initiative launched a regional action plan to coordinate national approaches for addressing the NPL problem, drawing on the output of the previously established Work Group on non-performing loans. Hungary, Croatia, Serbia, Albania and Montenegro participated in this initiative, later joined by Macedonia. Vienna 2.0 also assessed and promoted the use of credit enhancement schemes in the EU as a tool to support SMEs access to finance.

Vienna 2.0 monitoring of the Central, Eastern and South Eastern European banking market allowed for observation of a new banking model emerging in the region. Since the financial crisis of 2008-2009, local subsidiaries were systematically reducing reliance on credit lines from their parent banks, replacing them with local deposits. It coincided with the post-crisis change of saving patterns in most of the markets. At the same time, lending was limited due to weak demand and constraints on the supply side, leading to deleveraging in most of the economies in Central, East and South East Europe. From the second half of 2014, the bank surveys showed an increasing demand in a number of countries, raising concerns about emergence of credit gaps in the future. Indeed, parent banks were reluctant to provide funding or capital support to their subsidiaries quoting the cost of post-crisis regulation and the country risk premia as the main reasons. The bank groups became more selective in their business strategies, focusing on markets with the highest growth potential (e.g. Poland, Czech Republic, Slovakia).

Vienna 2.0 preserved the successful brand name, the experience and the network of Vienna 1.0. It used them to support banking in the less developed and more vulnerable markets of Central and Eastern Europe through the crisis, although it was not able to alter the prevailing market trends. As the turmoil in the EU financial market ceased gradually, new banking model consisting of self-funded and less expansionary local banks is being established in the Central, Eastern and South Eastern European region. Meanwhile, new challenges emerged, such as prospective ownership changes for local subsidiaries of banks from the euro area going through substantial restructuring or the development of local capital markets inspired by the EU Action Plan on building a Capital Markets Union and the initiatives implementing it.

([1]) *CESEE Deleveraging and Credit Monitor*, issued quarterly by the IMF European Department since June 2012.
([2]) *CESEE Bank Lending Survey*, prepared semi-annually by the EIB Economics Department since October 2012.

6.1.4. The Nordic model of supervisory cooperation

Compared to the Central, East and South East Europe, financial integration in the Nordic-Baltic region was even more advanced. Six financial groups([1]) dominated the markets of Denmark, Sweden, Norway, Finland, Estonia, Latvia and Lithuania. Their exposures to other countries in the region played a major role in their balance sheets and they are systemic institutions in the local markets. As problems in any of those banks could easily reach a cross-border dimension, there were strong advantages from instituting a coordinated pan-Nordic resolution framework and burden sharing arrangement. Whereas some national authorities, in particular of the Baltic countries, participated in the Vienna 2.0 meetings, the cooperation in the region was launched without much involvement of international financial institutions and progressed autonomously.

In the Nordic-Baltic banking cluster, the work on a cross-border crisis management and resolution framework was based on a memorandum of understanding signed in 17 August 2010 between the fiscal authorities, supervisors and central banks([2]). Several working groups proceeded with practical aspects of implementation of the memorandum of understanding. For example, there was a separate sub-group on ex-ante burden sharing arrangements for Nordea group only. The memorandum of understanding also facilitated information sharing among relevant authorities, notably through establishment of the Nordic-Baltic Stability Group and the Nordic-Baltic Macroprudential Forum, including central bank governors and financial supervisors, whereas the Stability Group includes also senior representatives from the ministries of finance.

The Nordic-Baltic cooperation in the area of supervision and crisis management was widely considered as exemplary. Both the home supervisors and banks proved their commitment to preserving financial stability in the region during the 2008-2009 financial crisis. The parent banks continued to provide liquidity to their Baltic affiliates even during the deepest recession in the Baltic economies. Cultural factors and the encouragement from the home supervisors seem to have played a key role. Sometimes, the concept of "extended home market" (Hansson, 2013) was used to picture the level of integration achieved in the region in spite of different monetary regimes, ownership structures and financial deepening.

The achievements of cooperation in the Nordic region provided inspiration for other regions and the EU as a whole, although the framework was never tested in practice. The banking resolution cases that happened in the wake of the financial crisis in Latvia, Denmark and Lithuania concerned relatively small institutions operating mostly on the domestic basis.

6.1.5. Swift resolution in Lithuania

The Lithuanian banking sector was one of the smallest banking sectors in the EU, with total assets amounting to 67% of GDP in 2015. After the massive deleveraging triggered by the crisis, the sector did not regain its pre-crisis size (83% of GDP in 2007). The banking groups from Sweden, Denmark and Finland, SEB, Swedbank, DNB and Danske Bank, dominated the strongly concentrated market. In 2011-2013, Lithuania saw liquidation and resolution of two ailing domestic banks: Snoras and Ukio. The swift action by the Bank of Lithuania avoided spill-overs to other institutions and preserved financial stability in the country and the region.

In November 2011, Snoras Bankas, the largest domestic institution at the time (10% market share) was brought down by alleged financial fraud of its owners. The government nationalised the bank only to put it in the bankruptcy proceedings as the asset-liability gap amounted to as much as 50% of the balance sheet. In February 2013, the Bank of Lithuania put in resolution ailing Ukio Bankas (4% market share) on concerns about asset quality and risk management practices. Ukio bank's good assets were transferred to another domestic bank, Siauliu bank, supported by an equity participation of the European Bank for Reconstruction and Development. The funding gap was covered by the deposit guarantee scheme (LTL 0.8 billion, about 2.5% of GDP). The remaining Ukio's assets were liquidated.

([1]) Nordea, SEB, Swedbank, Svenska Handelsbanken (Sweden), Danske Bank (Denmark) and DNB (Norway).
([2]) Countries involved: Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden.

The problems of the domestic banks had roots in lenient supervision during the boom years, especially for cases of related lending (e.g. within the group or to affiliated companies). Since early 2012, following an internal overhaul, the Bank of Lithuania had taken a more determined and proactive approach to supervision. For example, in the case of Ukio, after an on-site inspection in January 2013 the Bank of Lithuania restricted Ukio operations on 12 February and appointed a temporary administrator who had to assess in detail the financial standing of the bank and present its conclusions to the supervisor within six days. On this basis, the resolution option was chosen, consisting in a transfer of good assets and insured liabilities to another bank. On 23 February, an agreement was signed with Siauliu bankas, which rehired also around 200 Ukio's employees. Customers' access to their deposits held at Ukio was fully restored on 5 March, only three weeks after suspension of the bank's activities.

The decisive action and clear communication by the Bank of Lithuania led to termination of risky activities of the shut-down banks, prevented spreading of contagion to other institutions and preserved financial stability in the country. The liquidation proceeds from Snoras were sufficient to pay back the loan in 2015 from the government to the Lithuanian Deposit Guarantee Schemes for the pay out of insured deposits. While it was not the case for Ukio, the loan granted to cover its funding gap was relatively smaller and banks' regular contributions to the Deposit Guarantee Schemes were sufficient to repay the government. Thus, the fiscal costs of the supervisory intervention were limited.

The remaining domestic banks in Lithuania, Siauliai bankas and Medicinos bankas, had a combined market share of about 8%. Medicinos bankas was subject to an enhanced supervisory scrutiny in 2014 and had to adjust the value of some assets and increase its capital. Lithuania had also more than seventy credit unions. They were niche players with total assets amounting to less than 2% of all financial institutions. Since early 2013 several ailing unions were shut down as part of tightening oversight also of this market segment.

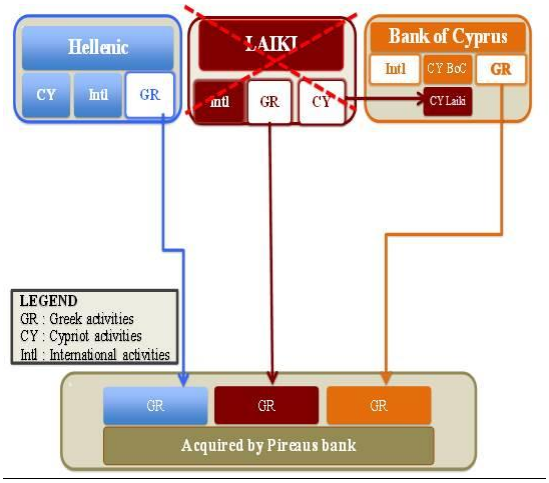
6.2. DEALING WITH THE GREEK-CYPRIOT LINK

The focus in this section is on the events in the summer of 2013 when the Greek activities of the Cypriot banks were carved out as part of the resolution and restructuring of the Cypriot banks. A welcome consequence was cutting a contagion channel between both countries. At the same time, the sale of the Greek branches contributed to downsizing the Cypriot banking sector. Also protecting financial stability in Romania against spill-overs from Greece and Cyprus whose banks have a strong presence in the country will be highlighted.

6.2.1. The carve-out of the Greek assets

The sale of the Cypriot branches in Greece not only contributed to the downsizing of the banking system in Cyprus, but also to cut a contagion channel between the island and Greece. The transaction lowered the contingent liabilities relating to the Cyprus Deposit Guarantee Scheme emanating from the deposits in the Greek branches of about EUR 15 billion or 80% of Cypriot GDP. Similarly, the loan exposure of the branches of about EUR 23.9 billion, representing 11% of loans in Greece and 41% in Cyprus, were a threat to financial stability in the latter country through its impact on bank profitability via the provisioning of bad loans.

Graph II.6.4: **The carve-out of Cypriot branches in Greece**



Source: European Commission

While accounting for a much smaller share of the deposit market in Greece and in terms of GDP only 8%, the branches remained of systemic relevance given the fragility of the financial situation in Greece. It was feared that a bank run on branches could easily spill over to the rest of the banking system.

The Greek and Cypriot side, involving the Ministries of Finance, the supervisors and the banks, negotiated a sale of the branches. The deal was concluded at a fair price reflecting the value of the loans, taking into account future losses which had been identified by the consultant Pimco.

The sales process was organised by the Cypriot Resolution Authority with, on the selling side, Bank of Cyprus, Laiki Bank and Hellenic Bank, and on the buying side, Piraeus Bank (Graph II.6.4). The deal was approved by the Greek and Cypriot banking sector supervisors. The nominal amount of the sold loans was about EUR 23.9 billion. On 31 December 2012, the Cypriot banks already took about EUR 4.8 billion of provisions on these loans, bringing the net value down to about EUR 19 billion and additional losses were estimated at about EUR 3.1 billion occurring in the next years. The purchase price was thus adjusted downward to reflect future losses. The loans were eventually transferred at a net value of about EUR 16.2 billion together with EUR 15 billion of liabilities.

The months following the sale, it was claimed that the transaction was a forced sale and transferred a huge amount of wealth from Cyprus to Piraeus Bank. These allegations were fed by the reporting of an increase in equity of EUR 3.4 billion as a result of the negative goodwill arising from the acquisition. However, the EUR 3.4 billion profit for Piraeus Bank was an accounting profit on paper, which was not expected to materialize. The "extra" capital would erode over time when the losses gradually materialise. The supervisor would make sure that this additional capital will not have an effect on the equity position of Piraeus Bank which would address its capital position with other means which is what effectively happened.

Under the commonly accepted accounting rules, banks do not have to make provisions for future losses, but only for existing ones. Piraeus Bank had therefore some leeway to either register the loans at their purchase price (EUR 16.2 billion, after deduction of existing and future losses) or book them at a higher price (reflecting only existing losses). The management decided to go for the latter and Piraeus Bank registered an upfront one-off profit by attributing a higher value than the paid acquisition price.

6.2.2. Protecting the Romanian banking sector from Cyprus and Greece

Banks with Greek and Cypriot capital have been important players in the Romanian banking sector. At the onset of the Cypriot financial crisis, two banks with Cypriot capital operated in Romania: the branch of Bank of Cyprus and Marfin Bank, the subsidiary of Laiki Bank (each with total assets of EUR 05 to 0.6 billion by end-February 2013). The Romanian branch of Bank of Cyprus would have needed to be subject to the bail-in of depositors. Due to the heavy outflows of deposits triggered by fears about a potential bail-in in the days following the agreement on the Cypriot package, the Romanian branch of Bank of Cyprus was closed down temporarily.

Whereas the banks with Cypriot ownership did not count for a high percentage of total banking sector assets, there was a risk of contagion to the Greek banks operating in Romania. After a process of managed deleveraging which started in late 2010, the total assets of banks with Greek capital still accounted for roughly 14% of total sector assets in 2013. The Romanian subsidiaries of the Greek banks were confronted with deposit outflows since the start of the Greek crisis and although their situation stabilized in the second half of 2012, their deposit base has been highly sensitive to any adverse developments in the euro area and, in particular, in Greece.

Before its temporary closure, the Bank of Cyprus branch ran out of liquidity and eligible collateral for the refinancing operations with the Romanian National Bank. Due to its unbalanced funding structure, the Bank of Cyprus branch had only a small local deposit base and was highly dependent on parent bank funding. The Romanian authorities tried to avoid any negative impact on financial stability and the bail-in of depositors, as Romania would have been the only EU Member State apart from Cyprus implementing a bail-in of depositors.

After almost four weeks of closure and intense cooperation between the Romanian and Cypriot bank supervisors, the Bank of Cyprus branch was successfully integrated into Marfin Bank, the Romanian subsidiary of Laiki Bank. The transfer concerned all local deposits of the Bank of Cyprus branch, together with cash, liquid assets, and a sufficient amount of loans to small and medium-sized enterprises, so that the transferred bundle had sufficient surplus of assets over liabilities. This solution satisfied all involved parties and proved to be a good example of cross border home-host supervisory cooperation in a crisis situation. Romanian depositors were not subject to bail-in, whereas Bank of Cyprus avoided the fire-sale of its Romanian operations.

7. TACKLING PRIVATE INDEBTEDNESS

In this section private sector debt is discussed with a special focus on EU Member States with rapidly rising indebtedness of households and firms. The timeframe in which private debt rose is put into perspective and the main driving forces behind the rapid expansion. Attention is paid to the countries where private sector indebtedness was primarily driven by foreign currency lending. Following the financial crisis and the depreciation of local currencies, foreign currency loans became a major concern and triggered government intervention. Lastly, this section looks at some borrower protection schemes, bankruptcy frameworks and in general at the insolvency regimes that were recently re-shaped.

7.1. A CLOSER LOOK AT PRIVATE SECTOR DEBT

A heavy debt load is a source of worry: the larger the nominal amount of debt, the higher the debt service burden and the more a household or firm has to pay as interests, the less funds ultimately available for consumption and investment. Once the debt service becomes too high, the outcome is bankruptcy. At moderate levels, credit and debt are vital elements of economic activity allowing economic agents to optimise their cash flows. Households borrow to smoothen consumption and to purchase dwellings whereas firms require credit to finance their working capital needs and longer term investments.

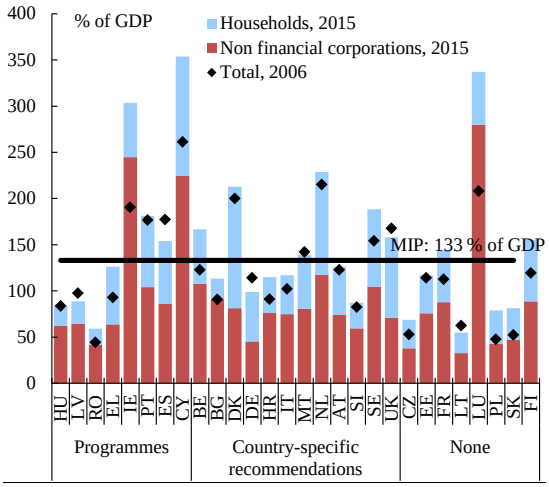
Private sector debt has a bearing on monetary policy and is a key determinant of financial stability. The higher the stock of debt, the more sensitive economic agents become to changes in interest rates which monetary policy has to take into account. Given its importance for macrofinancial stability, private sector debt features as an integral element in many Memoranda of Understanding signed with countries going through economic adjustment programmes, in particular with Latvia, Ireland, Portugal and Cyprus. Private sector debt is also a major part of the European Commission's macroeconomic imbalances procedure and holds a significant place within the country-specific recommendations, specifically for Portugal, United Kingdom, Sweden or the Netherlands.

7.1.1. The run-up to the crisis

The positive macroeconomic climate starting in the late 1990s and favourable financing conditions drove higher income expectations for European households and firms. It led to a sharp increase of debt in the private sector of which the larger part is due by the non-financial corporations (Graph II.7.1). In several countries private indebtedness was above the threshold of 133% of GDP which is considered a trigger point in the macroeconomic imbalances procedure for closer monitoring.

In particular, in peripheral countries of Southern Europe, but also in a few central European Member States, private debt increased a lot. Real interest rates declined as a consequence of deepening pan-European integration through the introduction of the euro and enlargement.

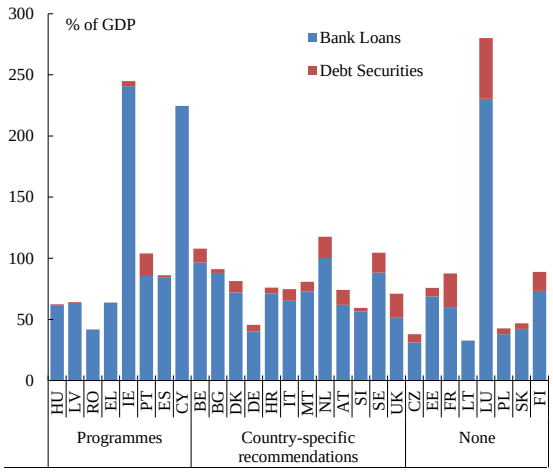
Graph II.7.1: **The rise of private debt**



Source: Eurostat

The debt expansion in the private sector was largely attributable to long term bank lending, whereas debt securities represent traditionally a very small fraction (Graph II.7.2). In parallel, the emergence and expansion of new financial products, including securitisation, which allowed banks to offload risk and increase their leverage facilitated access to credit across Europe.

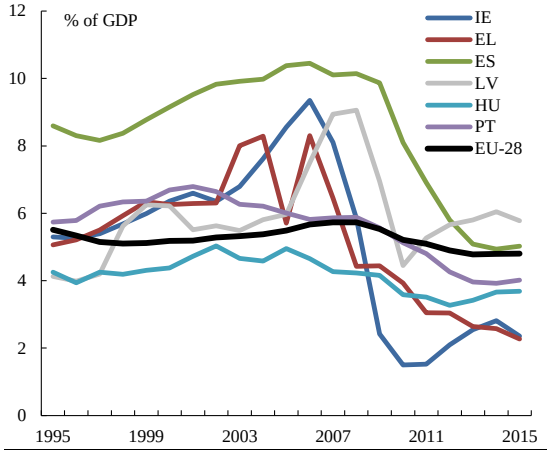
Graph II.7.2: **Debt composition of firms in the EU in 2015**



Source: Eurostat

Underlying the debt built-up is often leveraged investment activity by non-financial firms in often less productive fixed capital formation in the construction sector (Graph II.7.3). Building services expanded, often with small or microenterprises in the lead and attracting much debt and little equity.

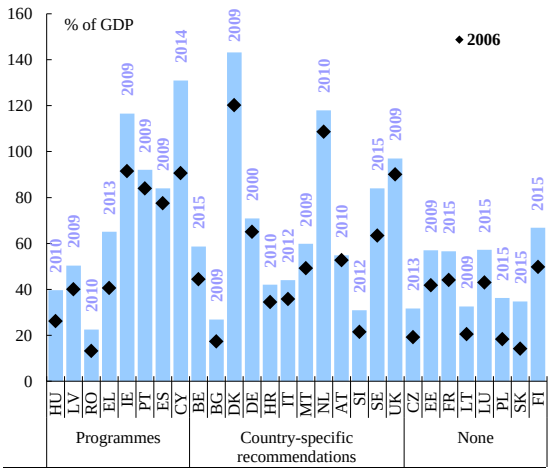
Graph II.7.3: **Share of value added of construction**



Source: Ameco

Households, in turn, encouraged by rising property valuations (Graph II.7.5) gradually developed a higher propensity to run up debt in order to finance real estate purchases and consumption. Between the mid-nineties and the beginning of the global financial crisis in 2007 the nominal stock of household debt in the EU was multiplied by a factor of three (Chmelar, 2013). In some programme countries such as Ireland, Portugal, Cyprus and Spain, household debt shot up to high level mostly fuelled by significant real estate expansion (Graph II.7.4). Outside the programme context, also in Denmark, the Netherlands, Sweden and the UK households are considerably indebted. The rise in household debt was not confined just to the western part of the EU. While not reaching the level of some old Member States, the increase of household debt was particularly sharp in Latvia, Hungary, Poland and Slovakia.

Graph II.7.4: **The peak of household debt**



Source: Eurostat

7.1.2. Differences across countries

With the surge in house prices the ratio of household debt to GDP or, to disposable income for a better gauge at the debt servicing capacity, increased significantly but wide discrepancies exist. In Ireland, e.g., the household debt to GDP ratio reached at its peak (Graph II.7.4) almost 120%, but the leverage to disposable income attained 200%, while in Hungary the corresponding numbers went up from close to nil to 40% and 71%. Furthermore, not all highly leveraged households run into financial difficulties. Households were saved from major problems in Luxembourg, Sweden, the Netherlands or Denmark. Nevertheless, often the situation was considered sufficiently risky to be addressed by country-specific recommendations.

Similarly, the leverage of non-financial enterprises is very different in the EU. In programme countries such as Portugal and Spain the corporate

Table II.7.1: **Debt service ratio of non-financial corporations in selected countries**

	2006	2007	2008	2009	2011	2012	2013	2014	2015
Belgium	41.7	43.4	45.7	45.9	50.9	50.2	50.2	51.7	51.8
Germany	19.9	19.5	20.5	20.9	18.5	19.3	20.0	19.3	18.9
Denmark	39.5	51.6	52.2	55.0	48.8	47.1	43.9	39.5	35.4
Spain	66.1	71.7	62.6	54.2	54.4	50.9	45.1	39.9	37.3
Finland	31.9	31.1	38.4	39.1	39.8	41.7	44.1	38.9	41.7
France	42.2	41.1	44.1	44.6	47.7	51.5	52.2	52.5	49.4
United Kingdom	37.7	39.4	42.5	41.0	32.9	36.0	33.7	30.8	31.2
Italy	33.8	39.5	42.1	40.9	40.3	43.4	42.2	41.5	39.5
Netherlands	39.2	35.9	37.8	39.1	36.9	37.6	37.5	42.6	41.5
Portugal	57.6	62.1	71.8	64.9	65.0	64.5	60.0	57.5	54.3
Sweden	32.1	29.6	36.3	44.9	39.6	41.5	41.8	39.6	41.5

The debt service ratio is defined as the ratio of interest payments plus amortisations to income.
Source: Bank of International Settlements

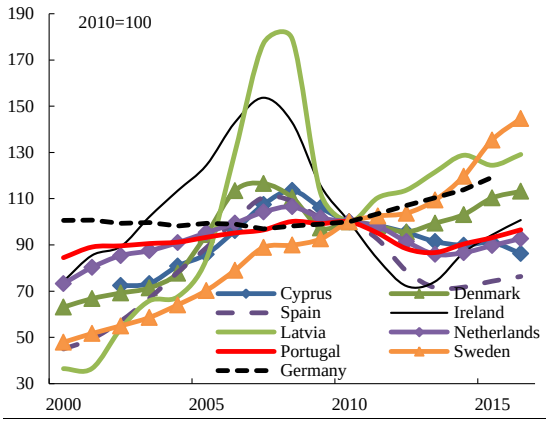
debt service ratio increased significantly above 50% considered a warning threshold (Table II.7.1). Spanish companies have managed to deleverage whereas Portuguese companies continue to struggle with debt servicing and disburse over half of their yearly income on servicing debts. Also Belgium and France or Denmark in the past are characterised by a relative high debt service compared to the firms' revenues, but seemed to have coped better with the challenges.

There are two main reasons why a similar rise in indebtedness produced very divergent outcomes. Firstly, the relative stability of the asset side of households' balance sheets, usually dominated by real estate, held remarkably well over the crisis years in some European countries compared to some other (Graph II.7.5).

Secondly, part of the explanation is provided by the very dissimilar institutional frameworks, including the tax treatment of financing costs These institutional frameworks have a particularly strong influence with regards to mortgages, which represent on average 67% of EU's households' debt (80% in Ireland, Spain and United Kingdom), and also on the accumulation of debt (instead of equity) in the case of non-financial sector firms (Fatica et al, 2012). For instance in Portugal, firms consistently chose financing through debt instead of equity because the local tax regime (as in many other EU countries) favoured debt over equity, hence weakening the firms' capital position over time.

A case in point is the Netherlands, where under the terms and conditions of most housing loan contracts only interest had to be paid during the term of the loan whereas the repayment of the principal was not due until the loan reached maturity. This results in systematically higher debt ratios for Dutch households, which are, however, not accompanied by an increased debt servicing burden. Similarly, Danish households differ from their European peers in that they have very large pension wealth accumulated over their professional life. This means that many Danes can look forward to relatively high income after retirement, which reduces their need to be debt-free when they retire. Furthermore, in the Netherlands, Sweden and Denmark, as was the case in Spain until 2011, interest payments on housing loans are tax deductible, reducing the overall debt servicing burden further.

Graph II.7.5: **House prices index in some selected EU MS**



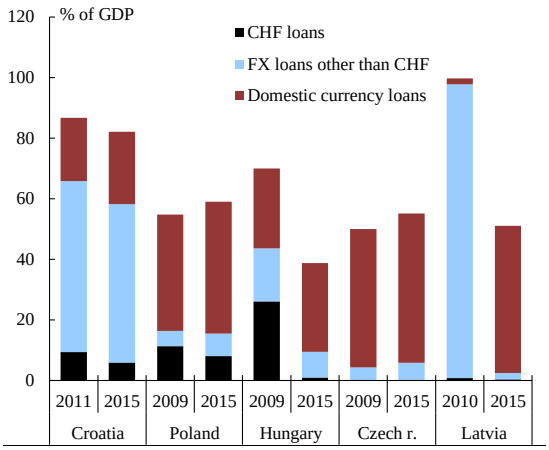
Source: Eurostat

7.2. SPECIFIC CHARACTERISTICS OF CREDIT EXPANSION IN CENTRAL AND EASTERN EUROPE

7.2.1. Boom years of foreign currency lending

In the 1990s, credit markets barely existed in countries of Central and Eastern Europe. After the fall of communism most lenders were state-managed whereas credit was rationed according to different criteria and the price of real estate was kept low by housing policies and regulation. When the borders opened, many Western European credit institutions seized the chance to set up subsidiaries in the region to the extent that many banking markets were practically fully foreign owned (Slovakia, Czech Republic, Hungary, the Baltics). The recession associated with the economic transition from state run to market economy was associated with significant inflation linked to price liberalisation, volatile exchange rates and high interest rates. In that context loans in foreign currencies, mostly in Swiss franc and the euro, were attractive (Graph II.7.6).

Graph II.7.6: **Changing currency composition of loans to the non-financial sector**



Source: ECB

The presence of foreign currency borrowing showed very differing patterns across the new Member States (Rosenberg, 2008). At one extreme are the Baltics states of Estonia, Lithuania (both operating with currency boards) and Latvia with over 80% foreign currency stake in household debt (all denominated in EUR) and at the other extreme are the Czech Republic and Slovakia with virtually no foreign currency lending. In between is a group of countries exhibiting strong willingness to borrow in foreign currency, Poland, Hungary, Croatia and Romania, where foreign currency mortgages were mostly denominated in Swiss franc.

Initially, foreign-currency loans were not perceived as destabilising but rather considered an opportunity to borrow at lower and more stable interest rates than rates offered in local currencies. Banks did not take on their balance sheets any sizeable currency risk but rather passed it on to households and the corporate sector (Csajbók et al, 2010). Eventually, the high 'euroisation' and 'francisation' of loans in certain new Member States generated a major economic shock wherever local currencies rapidly lost value in 2008 and 2009. This currency risk in some cases, notably in Hungary, developed into a major credit risk for the banking sector.

7.2.2. Foreign currency lending: a social and a financial stability issue

To curb the credit boom in emerging Europe and address the rising popularity of foreign currency loans (Table II.7.2) measures were taken. Most of them were aimed at the supply side by making foreign currency loans less attractive for banks through higher capital risk weights, higher provisioning or reserve requirements on foreign currency. Notwithstanding these actions foreign currency credit continued to progress, particularly in Hungary, Poland and the Baltics, until 2008. The Commission closely monitored these developments and engaged in an active dialogue with the Member States to match the interests of the different stake holders including banks pointing at the free movement of capital and debtors arguing insufficient transparent loan contracts, referring to the directive on credit agreements for consumers (87/102/EEC of 23 April 2008). Furthermore, the issue of foreign currency denominated loans received special attention in the Mortgage Credit Directive (2014/17/EU of 4 February 2014).

Table II.7.2: **Policy measures to curb foreign currency lending**

	Latvia	Hungary	Poland	Romania	Croatia
Higher risk weights, provisioning or reserve requirements in relation to banks FX exposure	√ ●	●	●	√ ●	√ ●
Narrowing interest rate differentials			√		
Increase of flexibility of exchange rate			√	√	
Cross-border supervisory intervention	√				
Active monitoring of FX risk	√	√		√	√
Disclosing FX risks to customers		√ ●	√ ●		
Tightening eligibility criteria for FX borrowing (LTV, LTI)	√	√ ●	√ ●		
FX position limits	√				●
Restrictions on FX lending	●		●		
Codes of conduct discouraging use of FX lending		●	●		
Ban on FX lending		●			

Pre-crisis thick mark, post-crisis dot
Source: Brown and Lane (2011)

From a social point of view, the excessive accumulation of foreign currency led to the risk of a deterioration in households' social and economic well-being. It materialised in some extreme cases to social exclusion and poverty. Consequently, the government in Hungary, similarly to the authorities in Latvia, introduced laws to improve the borrowers' situation vis-à-vis local lenders.

Latvia introduced a new personal bankruptcy legislation, enacted in July 2010, after consultation with the banks, EU and IMF staff in the context of the economic adjustment programme. The law foresaw the scheduling of debt write-offs depending on a borrower's income and debt levels after bankruptcy procedures allowing for a fresh start i.e. borrowers' liabilities were written off after one or two years depending on the amount the borrower was able to repay following the mortgage sale. In parallel, the Latvian authorities drafted a support scheme for mortgage borrowers (based on a state guarantee and partial debt restructuring by the mortgage lender) setting monthly loan payments at an affordable level by freezing up to 20% of the loan for 2-3 years. The "disciplined" borrowers were to be rewarded at the end of the restructuring period with part of the frozen loan to be written off by the lending bank. The scheme as such was not used, but some of its building blocks such as the partial write-off of debt were recycled in the personal bankruptcy legislation.

The Hungarian authorities put in place under the adjustment programme a similar borrower protection scheme. At its core was a mortgage guarantee system that was subdivided into two measures, each targeting a specific population of home owners. The scheme was running between mid-2009 and end-2010. It was essentially based on making available a bridge loan (covered by a state guarantee) of 80% of the mortgage for homeowners who lost their employment and of 70% for mortgage holders facing a shock to their disposable income. Eventually, the measure had a limited take up, mainly because of the very stringent selection criteria put in place.

The Hungarian authorities continued to launch mortgage relief plans throughout the years 2010-2015. In July 2011 the Hungarian government opened the possibility to service foreign currency denominated mortgages at a preferential exchange rate, with the difference rescheduled and partly government-guaranteed. In parallel a general ban on foreclosures was replaced by quotas on the number of foreclosures and a national asset management company was setup to buy some distressed properties. In September and December 2011 a time-bound offer to debtors to fully prepay outstanding foreign currency mortgages at a preferred exchange rate (implying a debt relief of 20-30%) was launched generating losses initially fully borne by the banks and later partially assumed by the state. More measures followed up until 2015 when all foreign currency denominated mortgages and consumer loans were finally converted into forints and excessive fees and margins on foreign currency mortgages had to be returned to borrowers. The gross cost of the foreign currency conversion and compensation schemes launched in Hungary between 2011 and 2015 is estimated at about EUR 3.5 billion.

More recently, following the Swiss National Bank's decision to end the peg to the euro in January 2015, both Croatia and Poland announced steps to limit the adverse consequences of Swiss-franc denominated loans for households. While Poland is still in the process of assessing steps to be taken, Croatia followed through with a special law enacted in January 2015 freezing for a year the exchange rate for Swiss-franc denominated loans. In a September 2015, Croatia's parliament voted a package of laws allowing all Swiss-franc denominated loans to be converted into the single currency at the cost of ca. EUR 1.1 billion for the Croatian banking system.

7.3. DELEVERAGING: POLICY OPTIONS

7.3.1. The conventional tools in disarray

The plain solution for debt is to pay it off, but this may have consequences beyond the individual borrower in bad economic times. Overleveraged firms avoid investing and concentrate on repaying loans. Households reimburse debt by trimming spending, which is one of the main components of GDP. Thus deleveraging becomes a painful process because growth is dampened when firms and consumers (let alone governments) jointly try to reduce their debts.

Throughout many debt crisis in the past, higher inflation and faster economic growth fostered debt reduction though facilitating the debt service. However, inflation in the euro area remains relatively low, despite the programme of quantitative easing by the ECB and growth is held back by the debt trap in which the need to deleverage weighs on growth. A way out is through much needed structural reforms to increase real growth. However, progress in the implementation of such reforms has been varied.

7.3.2. The relevance of insolvency frameworks

In a context of stagnant growth, countries explored mechanisms to transfer some of the burden from the heavily indebted economic agents to others, who supposedly could better afford it.

High debt concerns were identified in the corporate and household sectors in some programme countries including Cyprus, Hungary, Ireland, Latvia, Portugal and Romania. Accordingly, programme conditionality was aimed at establishing or amending personal and corporate insolvency frameworks and facilitating voluntary out-of-court debt restructurings for firms. The rationale behind this approach was that as long as private debts remain at high levels economic activity may struggle to pick up as both banks and the private sector are left with elevated levels of uncertainty and misallocated resources. A similar approach continues to be fostered through country-specific recommendations as well as in the Commission's action for a Capital Markets Union.

7.3.3. Consumer insolvency or how to avoid moral hazard

Consumer insolvency legislation has as purpose (Drometer et al, 2015) to create a balanced and predictable burden sharing between debtors and creditors (Box II.7.1). This needs to be implemented in the spirit of assisting individuals to make a "fresh start" after a certain period of repayment by discharging their remaining debts that cannot be served, but at the same time maintaining credit discipline and preventing moral hazard (Liu, Rosenberg, 2013). Highly indebted households are therefore directed into either a debt restructuring agreement with the lender or into the personal insolvency regime.

The preferred course taken in countries where households faced high indebtedness, namely in Latvia, Portugal, Ireland, Greece or Cyprus, was to amend and improve personal bankruptcy laws while also providing a safety net, often in some form of ban on foreclosures of primary dwellings (Hungary, Ireland, Cyprus, and Greece) for the most distressed households. Direct government interventions in the coordination of debt restructurings comprehensively applied in Hungary were the exception.

7.3.4. Improving the personal insolvency framework in programme countries

In programme countries, policy makers decided that the magnitude of the economic crisis required additional instruments to cope with the financial difficulties of households. In this regard, the avoidance of foreclosure of primary residences was a particular concern. The debt restructuring instruments were also aimed as tools to speeding up the deleveraging process of the private sector and by the same token reducing the amount of non-performing loans in the banking system. A multi-layer approach was followed in most programme countries comprising some or all of the following elements:

Box II.7.1: **Insolvency laws in the EU**

Corporate sector

In 2016, the European Commission proposed a business insolvency Directive, focusing on three key elements:

(i) common principles on the use of early restructuring frameworks;
(ii) rules allowing entrepreneurs to benefit from a second chance; and
(iii) targeted national measures to increase the efficiency of insolvency, restructuring and discharge procedures.

The proposed rules (European Commission, 2016b) follow key principles to ensure insolvency and restructuring frameworks are consistent and efficient throughout the EU:

- Companies will have access to early warning tools to detect a deteriorating business situation and ensure restructuring at an early stage.
- Flexible preventive restructuring frameworks will simplify court proceedings. Where necessary, national courts must be involved to safeguard the interests of stakeholders.
- The debtor will benefit from a breathing space of a maximum of four months from enforcement action in order to facilitate negotiations and successful restructuring.
- Dissenting minority creditors and shareholders will not be able to block restructuring plans but their legitimate interests will be safeguarded.
- New financing will be specifically protected increasing the chances of a successful restructuring.
- Training, specialisation of practitioners and courts, and the use of technology (e.g. online filing of claims) will improve the efficiency and length of insolvency, restructuring and second chance procedures.

The proposal followed prior initiatives by the EU (European Commission, 2014) addressing differences between national insolvency procedures as well as potential cross-border conflicts. More specifically, the aim is to shift the focus of proceedings away from liquidation towards ensuring viable businesses to restructure at an earlier stage so as to prevent insolvency. Despite reforms in many Member States, rules still diverge and remain inefficient in some cases. As regards the second chance, important discrepancies have remained as to the duration of the discharge period. The 2015 Insolvency Regulation (European Parliament and European Council, 2015) aimed at resolving conflicts of jurisdiction and laws in cross-border insolvency proceedings.

The above EU principles have features inspired by the American Chapter 11 Bankruptcy Code, based on the so-called debtor-in-possession principle and are in line with international best practise regarding design aspects of insolvency frameworks: (i) early resolution of debt distress, (ii) reorganising firms with a viable business model, while liquidating nonviable firms, and (iii) a resolution framework supportive of the continuation of viable firms.

Household sector

In general, there are two opposing models of consumer insolvency laws: the Anglo-Saxon and the continental European model, where the latter is a stylised representation of a still very diverse situation in the Member States. The first stands for a liberal "fresh start" policy and is common in the United States, Canada, UK and Commonwealth countries. The "fresh start" system allows debtors to discharge their debt via bankruptcy and continue their lives free of their existing debt without the need to follow a "payment plan" over a certain time period.

(Continued on the next page)

Box (continued)

The continental approach, on the other hand, consists of a long-lasting procedure, which allows for a "fresh start" only after a period of distress and sanctions during, which individuals have to live on minimum subsistence and need to contribute all excess earnings to their creditors (this is referred to as "earned start"). Laws within the continental approach mainly differ with regard to the duration of repayment and recuperation period. The German legislation, for instance, is considered as creditor-friendly: the discharge period is six years and can only be shortened to three years if the debtor is able to repay at least 35% of his/her debts. In Latvia, which is seen as debtor-friendly, the maximum discharge period is 3.5 years, which can be shortened to one year. Overall, recently European laws are moving towards shorter discharge periods. Most new consumer insolvency laws or amendments to insolvency legislation had a discharge period ranging from 3–5 years.

Mortgages typically represent the largest debt burden for households hence much attention was given to solving the issue of households unable to pay off mortgage debts. In most Member States mortgage loans were typically designed as recourse-loans i.e. a debtor is personally liable for a debt secured by a mortgage on real estate property. In case of default and if the resell value of the real estate collateral did not cover the full residual loan amount, the debtor was still liable for the deficiency claim as an unsecured debt. This typically occurred when the loan-to-value ratio was not sufficiently conservative at the beginning of the loan agreement or when the property value declined substantially between conclusion of the contract and the realisation of the collateral.

Depending on the particular circumstances, the remaining deficiency clause may have been not sustainable with regard to the (deteriorated) repayment capacity of the borrower. Therefore, modern and efficient bankruptcy procedures put in place in recent years included a discharge for over-indebted individuals – this became gradually an emerging European best practice. Such procedures typically included the entire indebtedness of the debtor and were not limited to the mortgage debt. Consequently, during bankruptcy, the insolvent debtor had to realise all his assets (basic subsistence assets and income excluded) in order to satisfy creditors' claims and to use his repayment capacity for the redemption of the debt for a period of "well-behaviour". After this period the debtor was discharged from all remaining debt and was awarded a "fresh start".

(i) Arrears management within the financial institutions was enhanced by supervisory guidelines providing incentives for banks to offer restructuring options to borrowers in financial distress. These measures in some cases included a mediation authority and were complemented by early warning tools, supervisory restructuring targets and early intervention tools to prevent the build-up of arrears.

(ii) Existing bankruptcy procedures were reviewed to follow European best practice involving the entire indebtedness of the debtor.

(iii) Collective insolvency procedures were set up establishing repayment plans approved by the majority of the creditors and (usually) confirmed by the local court. Following the plan guarantees that the remaining debt is discharged (with exception of mortgages).

(iv) Targeted restructuring tools focused on loan contracts collateralised by mortgage on the primary residence with embedded protection for the most vulnerable debtors (usually with rigorous eligibility criteria in order to eliminate the risk of moral hazard).

(v) In purchase-to-rent schemes debtors were allowed to surrender the primary residence ownership to the bank and to pay rent instead of loan instalments. Alternatively the property or the loan was taken over by a state-owned asset management company against payment of rent.

Greece attempted to avoid foreclosures of primary residences by implementing two blanket moratoria (2008 and 2013-2014) on auctions of repossessed assets which stopped enforcement of loans secured by real estate property. This was however interpreted by many mortgage debtors as consent to allow defaults on mortgage loans without having to fear any type of consequence. Under the Greek personal insolvency law debtors were able to apply for a judicial arrangement to settle overdue debt disputes. A debt settlement could be negotiated out-of-court (upon approval of a majority of the creditors) and confirmed by court approval. In case the plan was not accepted by the creditors the court would impose restructuring measures. If the debtor's assets were deemed insufficient to repay the debt, the court would then develop an alternative repayment plan. The court was also entitled to apply specific measures to protect the primary residence (not exceeding a certain square meter threshold) such as granting a grace period or maturity extension and reducing the principal to 85% of the commercial value of the property.

In the course of the economic adjustment programme, Greece also established (2013) an additional assistance programme for highly indebted borrowers under narrow eligibility criteria (households with post-tax income of up to EUR 25 000 fiscal value of main residence of up to EUR 180 000 cap on fixed assets and total savings). This measure applied exclusively to loans which had not yet fallen due and were secured with a mortgage on the primary residence. The scheme required lenders to offer certain restructuring measures of the mortgage contract (repayments set to 30 percent of post-tax income for 48 months, while the difference was capitalised and repaid after the completion of the facilitation programme, cap on interest rates), but did not include any other type of debt. In general, all these restructuring efforts were hampered by excessive court waiting times.

The **Portuguese** general debt restructuring code was complemented by an extraordinary regime to protect vulnerable mortgage borrowers making a restructuring offer (grace period, maturity extension, additional loan) by the credit institution mandatory under certain conditions. The limited options for restructuring proposal were listed in the bill and did not include reduction of principal of the loan. Whenever measures listed in the law were considered as sufficient to result in a viable debt restructuring plan, the creditor had to offer to the debtor options which substitute the realisation of collateral e.g. the property was transferred to the creditor as performance in lieu or the property was exchanged for a property of lesser value and the outstanding loan amount was reduced accordingly. A third option included the alienation of the property to a state owned asset management company, including the right to repurchase. Only if the debtor refused all three options the creditor was able to start enforcement procedures. This extraordinary regime put in place in 2012 was narrowly targeted to vulnerable borrowers in extremely difficult financial situations (default on loan repayment plus substantial household income reduction).

Spain established a new collective procedure for restructuring in insolvency during which an insolvency mediator assisted to develop a restructuring plan which was aimed to provide for a partial debt discharge (up to 25%) and a three year discharge period. The plan required approval by creditors representing at least 60% of the outstanding debt. The restructuring plan allowed the surrender of property in lieu of performance in case the relevant creditors agreed.

Ireland established a voluntary Personal Insolvency Arrangement during which an insolvency practitioner established an individual restructuring plan for the debtor. The procedure was not limited to mortgage debt. The insolvency practitioner would endeavour to develop a plan which would allow the debtor to keep his primary residence. Possible restructuring measures were listed in the law and included reduction of principal. This debt restructuring incorporated the total indebtedness of the debtor, i.e. all secured and unsecured debt. The restructuring plan would then be adopted by a majority (representing 65% of debt) of the secured creditors and confirmed by the court. In case the debtor was fully compliant with the repayment plan, the residual debt was discharged at the end of the plan. If there was no agreement between creditors and debtor on a plan or the debtor defaulted on a previously agreed plan, the creditor would then continue with enforcement measures and repossessed the property while the debtor would remain liable for the deficiency claim. Ireland also established a

state-owned asset management company which transferred the non-performing loans from the banks' balance sheets.

Cyprus reformed the bankruptcy law in order to establish the possibility of a fresh start for the debtor. Additionally, a restructuring process was set up for borrowers in financial difficulties in order to avoid bankruptcy and in particular, to avoid foreclosure of primary residences. The law established a voluntary Personal Insolvency Arrangement by copying the Irish model, although with a reversed majority requirement. The tool targeted debtors who had experienced a reduction in their repayment capacity and were undergoing financial stress but still had a regular income and a repayment capacity compatible with the conditions of the restructured loan. Additionally, whenever an agreement was not reached a compulsory enforcement was set up to allow the debtor to apply to the court for the imposition of a restructuring plan on the creditors, subject to certain criteria. Also, a new foreclosure law was adopted as efficient enforcement instruments were considered crucial for ensuring contractual and property rights of the creditor and to avoid wrong incentives in a debt restructuring process, creating moral hazard.

7.3.5. Corporate insolvency tools – the difficult road to debt write offs

In countries such as Portugal, the weight of repaying existing debt by corporations (Table II.7.1) restricts firms in undertaking new investments. In that context insolvency measures contribute to reducing the adverse effects of the debt overhang on economic activity by freeing up resources caught in unproductive activities (Bricongne et al, 2016). Moreover, effectively functioning corporate insolvency frameworks can mitigate deadweight costs linked to bankruptcies by providing a transparent and speedy process for resolving debt that became ultimately non-viable.

Not only Portugal, but also Ireland, Cyprus or Spain chose to design or reshape corporate insolvency frameworks to promote restructuring and rescue rather than winding up or liquidation, and have improved their insolvency procedure.

Similarly to consumer insolvency tools, an efficient corporate insolvency framework has to ensure that non-viable debts are resolved while viable debts get repaid (Goode, 2010). Therefore, improving insolvency frameworks and voluntary out-of-court debt restructuring processes remains the preferred solution to deal with high corporate debt. Key to success is to ensure that firms with viable activities are reorganised, while nonviable firms are liquidated.

The modern principles on which corporate insolvency reforms should be based are also reflected in a Recommendation from 2014 and a recent proposal for a Directive (European Commission, 2014 and 2016) on a new approach to business insolvency (Box II.7.1). The purpose of these initiatives is to stimulate convergence in insolvency regulations across the EU by developing a set of minimum standards with which national insolvency legislation would be required to comply. These common standards reflect a view on what constitutes best-practice regulation and in particular the view that facilitating opportunities for restructuring early on before the initiation of formal insolvency proceedings is preferable from the point of view of both creditors and debtors. The Directive will ensure that entrepreneurs get a second chance at doing business after a bankruptcy and will lead to more effective and efficient insolvency procedures throughout the EU. The standards from the European Commission, as well as work done by the World Bank and the IMF are benchmarks for country surveillance in the matter of improving the insolvency frameworks across EU Member States. Programme countries but also stressed countries such as Italy have made considerable efforts to improve their insolvency frameworks and out-of-court mechanisms. As good as they may become, insolvency frameworks by themselves are no panacea to the debt overhang problem. Their effectiveness depends on additional supporting policies, including the availability of an adequate judicial infrastructure as well as appropriate regulatory and tax policies aimed at ensuring financial stability and supporting incentives to resolve debt.

Cyprus introduced a number of important reforms in 2015. The reform had as an explicit objective to ensure a proper balance in the incentives of creditors and debtors with a view to improve payment discipline and provide for appropriate mechanisms for vulnerable debtors with smaller debts as well as giving companies the possibility of a "fresh start". Secured or unsecured creditors were enabled to request the court to order a company liquidation. All corporate assets were subject to liquidation to satisfy creditors. Secured creditors could furthermore force a company into receivership, where the owner loses control of operations and is replaced by a receiver. The business or assets were sold to satisfy creditors. A new reorganisation scheme for companies, that may have been viable as a going concern, created temporary protection from creditor actions, while an examiner devised a restructuring plan.

Greece, despite having a relatively advanced insolvency law, has so far seen suboptimal outcomes in dealing with outstanding bad debts due to both the systemic nature of the debt, as well as to institutional bottlenecks in implementing the insolvency regime. It has made a number of reforms since 2010, including the introduction of a pre-insolvency regime. It simplified procedures for SMEs in the insolvency regime and put in place a number of support schemes for SMEs. In 2014 Greece adopted an out-of-court framework that enabled debt reduction based on economic means, as well as a corresponding tax credit for creditors and a restructuring of public creditors' claims according to instalment schemes. A special liquidation as a going concern procedure foresees a public auction with transfer to the highest bidder.

Ireland was characterised by a modern corporate insolvency framework even before the crisis. The authorities have put in place a scheme to support distressed SMEs including financing funds. The survival of the company can be achieved in a formal reorganisation coordinated by an examiner while the debtor remains in possession, or in a partly informal procedure requiring court approval and not granting an automatic stay.

Italy has started modernising its corporate insolvency framework early on in the 2000s. Since the onset of the crisis, the country has experienced a surge in NPLs which has pointed to the need for further reform both on the legal as well as institutional front. In 2012, Italy introduced particular procedures for personal insolvency, while also addressing corporate insolvency as regards fresh financing following the insolvency procedure. In 2013, Italy initiated a number of wide-ranging judicial reforms, including the specialization of the judiciary. In 2015, further reforms to the corporate insolvency were made including the possibility of competing plans in reorganizations, specific timeline for the completion of tasks by the insolvency administrator, more flexibility in the sale of assets (i.e. shorter delays, use of experts, less auctions, assignment to creditor, payment by instalments).

Latvia undertook an insolvency reform in 2010 by strengthening overall debt enforcement frameworks, adopting nonbinding guidelines for out-of-court debt restructuring and introducing a so-called "pre-pack" restructuring of debt where a restructure plan is agreed in advance of a company declaring insolvency. More recently, the country introduced additional protections for the debtor, while also focussing on the institutional framework. The formal restructuring procedure aims to ensure continuation of viable businesses, granting a 2-year stay on creditor enforcement. The failure of the restructuring plan usually triggers bankruptcy liquidation.

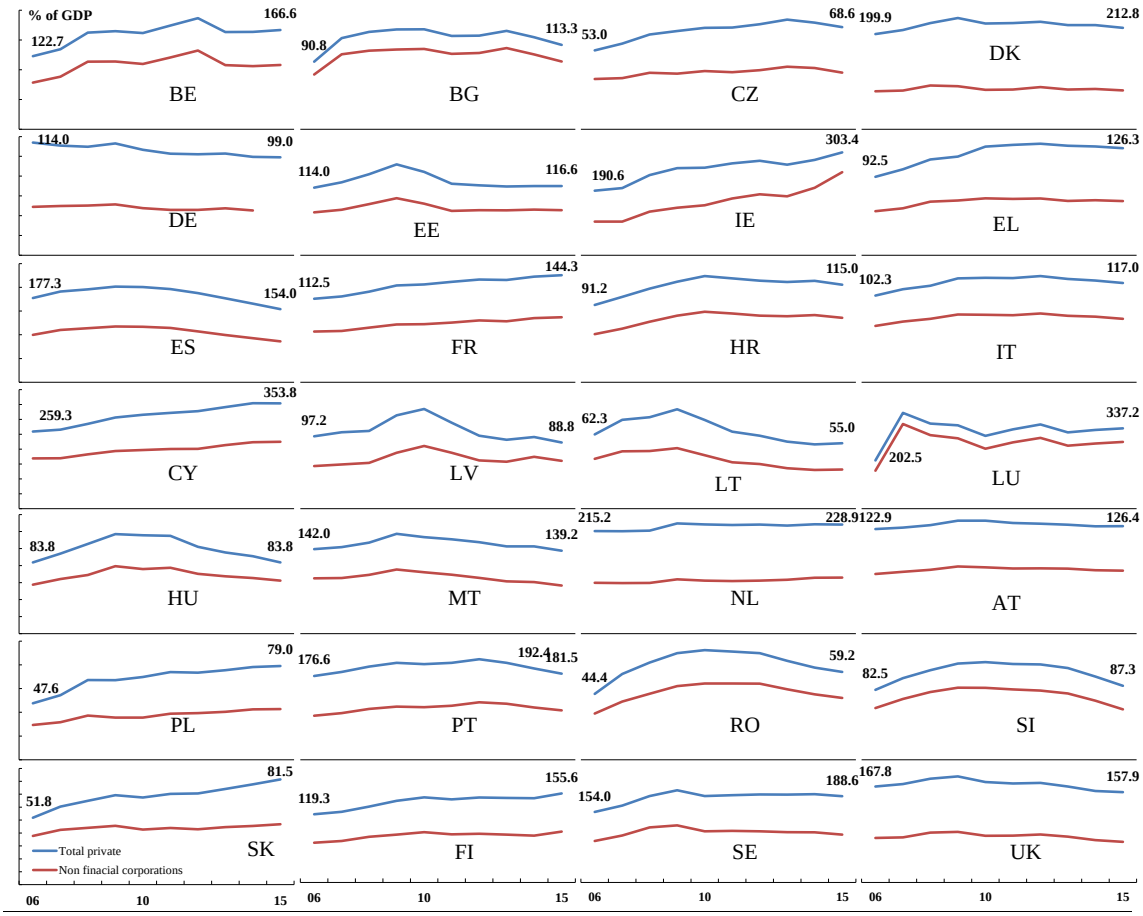
Spain's corporate insolvency framework has been historically leading to an overwhelming majority of liquidations. The country has since undertaken a number of reforms to improve the likelihood of corporate restructuring. In 2013 reforms were introduced, for instance, to shorten out-of-court settlements, in 2014 to strengthen the incentives for fresh financing following the insolvency procedure and survival of viable firms can be achieved in informal or formal debt restructuring. In some circumstances the debtor can remain in possession of assets during the formal procedure. The insolvency law facilitates liquidation as a going concern, with a particular focus on SMEs.

Portugal, similarly to Spain, revamped its insolvency framework with a view to limit the bias to corporate liquidation. A lot of effort was put into setting up pre-insolvency tools, PER (Special Revitalisation Process) and SIREVE (Extrajudicial Business Recovery System). Both proceedings were designed to enable companies in difficulty to restructure at an early stage with a view to preventing their insolvency, the core distinction being that PER is a proceeding, involving a certain degree of judicial intervention, while SIREVE is strictly out-of-court. Additionally, the new insolvency framework was enhanced by an early-warning system allowing banks and financial supervision to identify over-indebted firms.

7.3.6. Slow progress in the reduction of private indebtedness

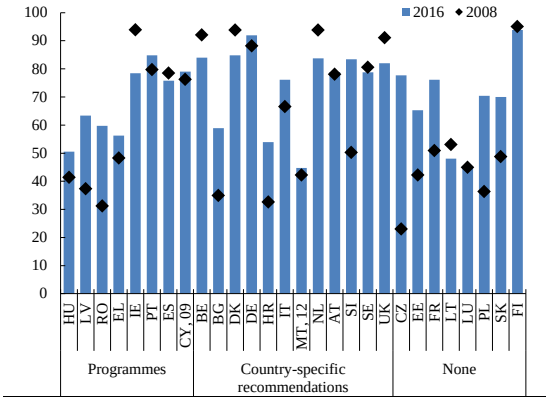
In sum, the implementation of measures to tackle private indebtedness debt is slow and challenging. Notwithstanding efforts and progress being made, corporate and household debt still exceeds the level of 133% of GDP, i.e. the threshold in the macroeconomic imbalances procedure, in four euro area countries that went through economic adjustment programme, while in Cyprus and Ireland, debt levels continue to be particularly high (Graph II.7.7). Because of the shrinking denominator in Greece, private indebtedness hardly stabilises in terms of GDP, but continues to be below the alert level of the macroeconomic imbalances procedure. In the three non-area countries which were under an assistance programme, indebtedness is much lower, below 100% of GDP, and on downward track.

Graph II.7.7: **Evolution of private indebtedness, 2006 - 2015**



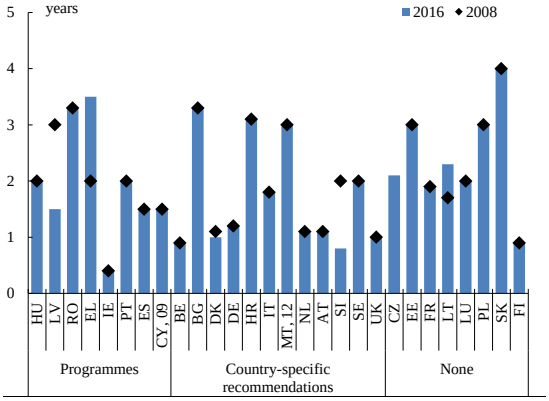
Source: Eurostat

Graph II.7.8: **Resolving insolvency score**



Source: World Bank

Graph II.7.9: **Time to resolve debt**



Source: World Bank

Outside the programme context, there are a number of countries characterised by a very high private debt level which appears difficult to curb, including Denmark, Sweden and the Netherlands. With country specific recommendations, one tries to address the excessive built-up of mortgage debt by e.g. limiting tax advantages or requiring phasing-in reimbursement of principal rather than a bullet payment at the end of the loan. Nevertheless, in these countries, as well as in Belgium and the UK, the debt burden appeared more manageable than in the programme countries as the recession was shallower keeping better up the value of the collateral. This is similar for Luxembourg, where there is the additional consideration that some of the debt created in the country may actually not be borne by its residents.

As to the debt composition, in most countries the share of corporate debt in total private indebtedness has declined since the financial crisis. Among the high debt countries, Portugal and Ireland are among the exceptions with rising shares reflecting the difficulty to restructure corporate debt. On the other hand Spain appears to have been more efficient in building down its corporate debt stock. Other countries with high levels of corporate indebtedness have reduced leverage with Luxembourg and Belgium but also Estonia leading the effort.

Based on the World Bank Doing Business survey, graphs II.7.8 and II.7.9 describe the overall insolvency score and the time to resolve debt. There remains a wide disparity both in the numbers of years to resolve debt (between 0.5 and -3.5 years) and in the overall efficiency score. There is no straightforward pattern for the insolvency score across the EU, although Anglo-Saxon and Nordic countries tend to have relatively higher scores both for what concerns the overall indicator and recovery rate indicator. However, overall it also appears that the EU countries that exhibit the strongest progress since 2008 are those that had relatively low scores prior to the crisis (in particular Latvia, Hungary and Romania), which reflects the drive to reform and enhance the insolvency framework as a tool to deal with unviable firms.

Part III

Impact on macro financial stability

1. STABILISATION OF THE BANKING AND GOVERNMENT SECTOR

Following the implementation of the economic adjustment programmes, vulnerable countries managed to return their banking and government sectors to financial stability.

In general, an improvement of banking sector robustness took place in the whole EU. This can be assessed from two angles: i) a brief check of the bank prudential indicators will show that bank capital ratios were restored to safe levels, profitability became positive again, the rise in non-performing loans levelled off and the liquidity situation was normalised and ii) the market stock prices, ratings and the cost of funding of banks have improved, showing that the increase in investor confidence has validated the success of the bank stabilisation process.

Because of the intricate links between the sovereign and the banking sector, the former suffered when the latter was in disarray (e.g. Ireland) and vice versa (e.g. Greece). Three points are made: i) the financial situation of the government stabilised, but the risk premium reappeared; ii) different paths of stabilisation of government interest rates are observed as shaped by the success in implementing reform measures and avoiding contagion and iii) the sovereign-bank nexus increased from the angle of greater intertwined balance sheets, but spill-overs are mitigated through the ECB programme of quantitative easing, by regulatory measures and fiscal policy.

1.1. A SIGNIFICANT RECOVERY OF BANK PRUDENTIAL INDICATORS

Regardless whether the crisis originated in the financial sector or not, in all the countries affected by the economic recession a negative feed-back loop to the banking sector emerged. Programme countries suffered the largest negative impact, both due to liquidity and capital problems. First and foremost, the loss of depositor confidence and the drying-up of inter-bank and wholesale funding markets put tremendous pressure on the liquidity of banks in most programme countries. In parallel, but usually extending over a longer period of time, bank capitalisation suffered from the rising amount of impaired assets, which once recognized and provisioned, turned into losses that eroded the banks' capital.

The stabilisation process benefitted from the EU initiative to build-up a banking union that would strengthen the viability of banks and reduce the feed-back loop between the EU banking sector and sovereigns, thus ensuring a level-playing field in the provision of European financial services (see Box III.1.1).

As regards **liquidity**, the closure of interbank and debt funding markets and subsequent loss of depositor confidence was the first wave of the crisis to immediately impact banks. As these sources of funding dried up, banking systems were suddenly forced to vastly increase their reliance on Eurosystem liquidity, which coupled with sustained credit rating downgrades, implied that collateral availability became more important than banks had been accustomed to in the pre-crisis period. This trend can be observed with programme countries such as Ireland and Greece, who in 2010 and in the course of only a couple of months saw their Eurosystem reliance double to approximately 20% of their total liabilities. Portugal and Cyprus subsequently followed suit, with a similar order of magnitude albeit at a lower overall level. Portugal saw a doubling of its' Eurosystem reliance in mid-2010 from just under 5% to slightly above 10% as did Cyprus in mid-2012. Banks profitability was impacted through the increase in deposit interest rates that banks had to offer customers to either retain existing or attract new deposits.

As the balance sheet repair advanced and investor confidence returned, particularly in countries supported by external financial assistance, the liquidity pressures subsided. The improvement came not only from resumed access to interbank and capital markets and the reduction of illiquid non-performing legacy assets, but also from reduced lending activity as credit demand subdued. Eventually, the euro area banks' reliance on the Eurosystem borrowing was significantly reduced and most of the banks started to search intensively for opportunities to invest the available liquidity and increase their profit generating capacity.

Box III.1.1: **Banking Union**

In response to the financial crisis that emerged in 2008, the European Commission pursued a number of initiatives to create a safer financial sector. It became clear that, especially in a monetary union such as the euro area, problems caused by close links between public finances and the banking sector can easily spill over national borders and cause financial distress in other EU countries. The initiatives, which include stronger prudential requirements for banks, improved depositor protection and rules for managing failing banks, form a single rulebook which is the foundation of the so-called Banking Union.

The Capital Requirements Regulation, which applies from 1 January 2014, was aimed to ensure uniform application of Basel III in all Member States. It closed regulatory loopholes and thus contribute to a more effective functioning of the Internal Market. The rules removed a large number of national options and discretions from the Capital Requirements Directive, and allowed Member States to apply stricter requirements only where these are justified by national circumstances (e.g. real estate), needed on financial stability grounds or because of a bank's specific risk profile.

As the financial crisis evolved and turned into the Eurozone debt crisis, it became clear that, for those countries which shared the euro, a deeper integration of the banking system was needed. That is why, on the basis of the European Commission roadmap for the creation of the Banking Union, the EU institutions agreed in 2013 (based on the proposal of the European Commission in 2012) to establish a Single Supervisory Mechanism and in 2014 (based on a proposal by the Commission in 2013) a Single Resolution Mechanism for banks. Banking Union applies to countries in the euro-area. Non-euro-area countries can also join.

Since 4 November 2014, the ECB's Single Supervisory Mechanism directly supervises the 129 significant banks of the participating countries. These banks hold almost 82% of banking assets in the euro area. Banks that are not considered significant are known as “less significant” institutions. They continue to be supervised by their national supervisors, in close cooperation with the ECB.

The Single Resolution Mechanism became operational on 1 January 2016. The Single Resolution Board is the resolution authority for the significant and cross border banking groups established within participating Member States. In the context of the Single Resolution Mechanism, it works in close cooperation with the national resolution authorities. Its mission is to ensure an orderly resolution of failing banks with minimum impact on the real economy and on public finances of the participating Member States and beyond. A Single Resolution Fund was set up under the control of the Single Resolution Board. Where necessary within a resolution scheme and under certain conditions, the Single Resolution Fund may be used to ensure the efficient application of the resolution tools and the exercise of the resolution powers conferred to the Single Resolution Board by the Single Resolution Mechanism Regulation. The Single Resolution Fund is filled with contributions from credit institutions and certain investment firms in the 19 participating Member States within the Banking Union. The Single Resolution Fund will be gradually built up over eight years (2016-2023) and shall reach a target level of at least 1% of the covered deposits of all credit institutions within the Banking Union by 2023.

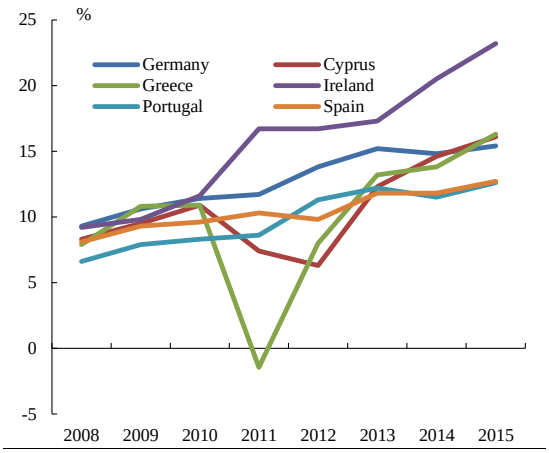
As a further step to a fully-fledged Banking Union, in November 2015, the Commission put forward a proposal for a European deposit insurance scheme, which would provide a stronger and more uniform degree of insurance cover for all retail depositors in the Banking Union. The European deposit insurance scheme is proposed to develop over time and in three stages: first a re-insurance stage, then a co-insurance stage and, finally, a full European system of deposit guarantees, which is envisaged for 2024. More information on the set-up of the EU Banking Union can be found in chapter 4 of the European Financial Stability and Integration Review (European Commission, 2017).

In 2016, bank liquidity in some euro area programme countries was reinforced by ECB operations, including the second series of targeted longer-term refinancing operations and the

expanded asset purchase programme. As a result, the funding costs of banks have reached multi-year minima.

As regards **capital levels**, one can observe a significant improvement for all programme countries and in particular for the euro-area ones from 2008 to 2015 (Graphs III.1.1 and III.1.2). Capital ratios in programme countries are not only above the regulatory minima required (in some cases, such as Spain or Portugal, explicitly asked for in the Memorandum of Understanding), but even compare favourably with other countries, such as Germany, that did not request financial assistance.

Graph III.1.1: **Tier1 capital ratio for euro area countries**



Source: ECB

The improved capitalisation of banks resulted from both more and higher quality loss-absorbing capital, as European banks started implementing the new Capital Requirements Directive IV([1]). Nevertheless, some analysts such as Schoenmaker and Peek (2014) argue that European banks are lagging behind their US peers in terms of equity issuance and non-risk weighted capital ratios. The EU-wide stress tests conducted by EBA in 2014 and 2016 confirmed the increase in capital ratios in recent years for the banks surveyed as regards the starting levels of the exercise. They also showed an improved capacity to withstand potential losses in case adverse conditions materialize for the banks in the sample([2]).

The banks in euro area programme countries had not only entered the crisis with lower capital levels than in non-euro area ones, but also reached very low points, some below regulatory minima, at certain moments in time.

Cyprus' average banking sector core tier1 ratio had dropped below 5% of risk-weighted assets (mainly due to the haircut of private sector investors in Greek sovereign bonds) and was only restored to normal levels following the March 2013 bail-in operation which affected holders of subordinated debt, unsecured senior debt and deposits. A further boost to bank capitalisation was given by the fresh private capital injected in Hellenic Bank and the injection of capital, financed by the external assistance, in the Cooperative Central Bank in March 2014.

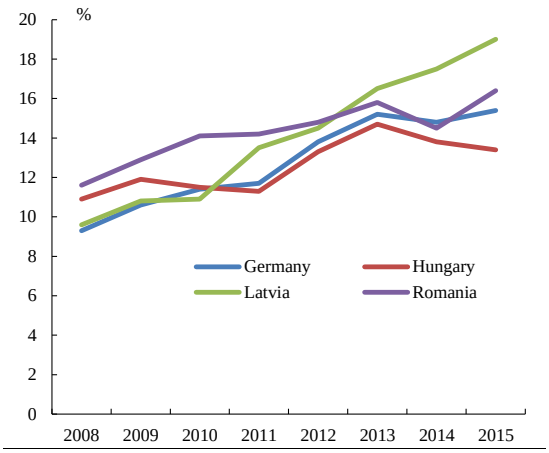
The same Greek Private Sector Involvement event in February 2012 led to a decline of the average Tier1 ratio of Greek banks into slightly negative territory. The recapitalisation of the banking sector was done predominantly with programme funds via the Hellenic Financial Stability Fund. In the other three euro area programme countries – Ireland, Portugal and Spain - capital levels have gradually improved over the programme period following banking sector stress-tests and due preventive recapitalisation with external financial assistance. Recapitalisation with private funds was ensured via burden-sharing, i.e. converting into equity subordinated liabilities, in Ireland and Spain ([3]). The issuance of fresh capital (common equity, subordinated debt and CoCos) took place in many programme countries once the confidence in the banking sector was restored.

([1]) The ECB and the European Bank Authority revealed in the second half of 2013 that about EUR 500 billion of new capital was injected in euro-area banks since the beginning of the crisis, leading to an improvement of the core tier1 ratio from 10% to 11.7% between December 2011 and June 2013 for the 64 most significant EU banks surveyed by European Bank Authority.

([2]) See the results of the 2016 EU –wide stress test at: https://www.eba.europa.eu/risk-analysis-and-data/eu-wide-stress-testing/2016

([3]) Spain was the first programme country where a mandatory subordinated liability exercise took place, whereas in Ireland a voluntary liability management exercise was arranged under which minority investors had to follow the decision of the majority.

Graph III.1.2: **Tier1 capital ratio for non-euro area countries**



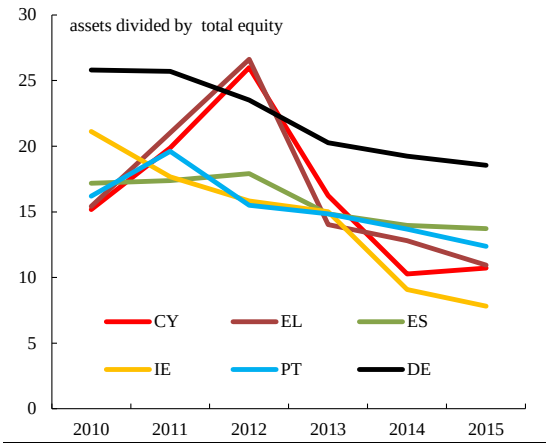
Source: ECB

Capital ratios of banks in the non-euro area programme countries were not only higher than in the euro area at the beginning of the crisis, but these banks were also predominantly owned by strong foreign banking groups. Therefore, public recapitalisation of banks was only a secondary concern. Support for financial institutions was more meaningful only in Latvia, while the bulk of recapitalisations in non-euro area Member States were done with private money.

The improvement in the capital positions of banks in all programme countries occurred against the background of a deleveraging of their balance sheets. The favourable evolution of bank **capital leverage** can be noted in particular in the euro area programme countries where banks were in general more leveraged at the beginning of the crisis than in the non-euro area programme countries (Graphs III.1.3 and III.1.4).

Whereas the general trend has been for banks to start deleveraging their balance sheets at the beginning of the crisis, banks in Greece, Cyprus and to some extent also in Spain and Portugal continued to increase their leverage until 2012 (Graph III.1.3). The average assets for Greek and Cypriot banks peaked at a very high level of more than 25 times their equity in 2012 due to a very significant drop in capital buffers rather than an increase in balance sheets. As of 2013, the spike in leverage came down towards the level of their peers both on account of rebuilding capital buffers and reducing the size of bank assets. In Cyprus, for example, the sale of foreign assets, the so-called "Greek carve-out" and the bail-in of liabilities in Bank of Cyprus and Laiki played an important role in reducing the very high leverage in 2013. In a similar way, the restructuring of Spanish banks and the transfer of real estate assets to an external asset management company(SAREB), together with the subordinated liability exercise and the recapitalisation of the transfer institutions resulted in a substantial decline of the leverage in 2013. Overall, during a five-year period, banks in the euro area programme countries managed to reduce the average leverage from 17 to 11. It is interesting to note that during the entire period their capital leverage was below the one in Germany, where the volume of risk-weighted assets relative to total assets was much lower.

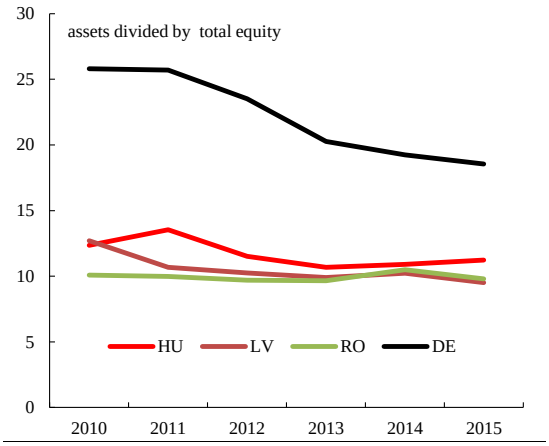
Graph III.1.3: **Leverage in euro area programme countries**



Source: ECB

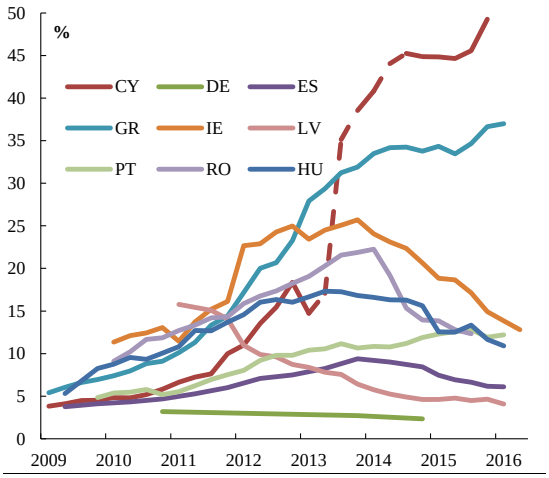
Banks in the non-euro area programme countries not only started with lower leverage than their peers in euro area programme countries, but also started rebuilding capital buffers and deleveraging balance sheets earlier than 2010 (Graph III.1.4). As a result, assets of banks in Hungary, Latvia and Romania represented 12 times their capital on average in 2010, which was already a comfortable starting position. As a result, the decline of the leverage in non-euro area programme countries was less pronounced during 2010-2015.

Graph III.1.4: **Leverage in non-euro area programme countries**



Source: ECB

Graph III.1.5: **Non-performing loans in programme countries**

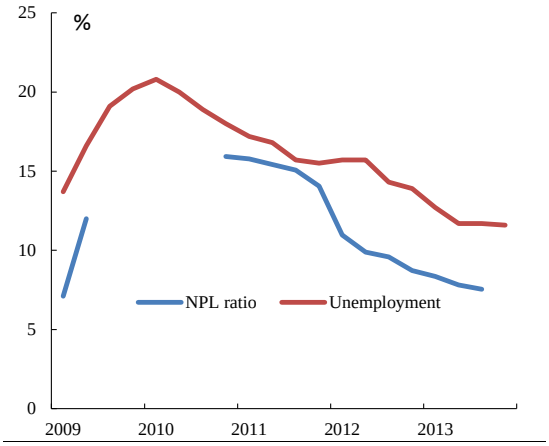


Source: IMF

The still high **levels of non-performing assets** represent, however, a risk to the current relatively solid capital positions of banks in vulnerable countries. Despite some progress with the cleaning-up of the banks' balance sheets (see part II.4) and the economic recovery, NPL ratios have levelled off and declined significantly in some countries such as Ireland, Latvia, Hungary, Romania and Spain, but continue their ascending trend in others (Graph III.1.5). This is partly a statistical effect, due to the fact that in many programme countries although the stock of NPLs is stabilizing or increasing at a slower pace, the stock of outstanding loans continues to shrink. Cyprus displays the highest NPL ratio of about 50% of total loans in the group, followed closely by Greece which also reached a very high NPL ratio in excess of 33% of total loans. The volume of NPLs has stabilised and started to decline slowly in Cyprus recently. In Greece, NPLs continue to rise, but the rate of new delinquencies has moderated. Concerns about the steady increase in the legacy non-performing assets in some banks have emerged recently also in non-programme countries, Italy for example.

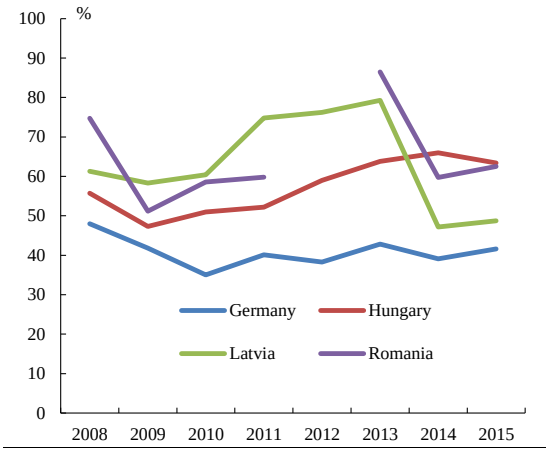
So far, progress with balance-sheet repair and clean-up remains uneven among countries and banks. In this respect, economic fundamentals play a major role, indicating that the recovery can only have a clear positive effect on loan repayment arrears only when the economic activity picks up and the situation on the labour market improves markedly. Latvia is a clear and so far unique example in this respect. Its NPL ratio dropped into half from more than 15% at the peak of its financial sector crisis to about 7.5% in the third quarter of 2013 as the unemployment rate almost halved as well from 2010 to 2013 (Graph III.1.6). In countries such as Ireland and Spain, where certain categories of legacy assets were transferred to a separate asset management company, the level of NPLs was positively impacted by these operations. This shows that in cases where the economic crisis was the result of excessive credit growth and private sector indebtedness dedicated measures to deal with the large amounts of bad loans are necessary. The mere waiting for the economic recovery to improve the payment capacity of debtors will not solve the issue if a serious misallocation of resources took place during the boom years.

Graph III.1.6: **Non-performing loans and unemployment in Latvia**



Source: IMF and Eurostat

Graph III.1.7: **Total loss provisions of impaired loans in non-euro area countries**



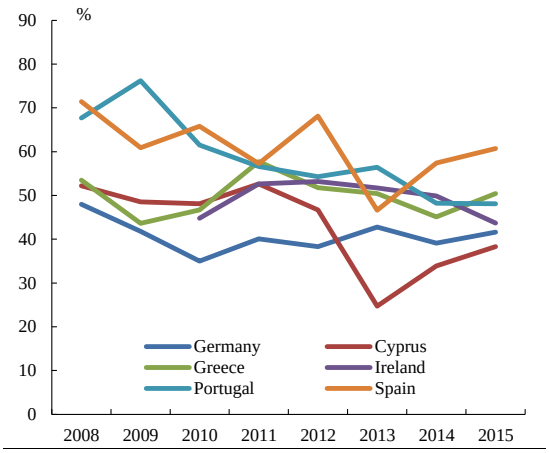
Source: ECB

There are also downside risks related to the current record-low interest rates and the relatively slow recognition of legacy assets in bank balance sheet. The former helps borrowers with loans with floating interest rate service their bank debts at present, but this favourable situation will not last indefinitely and may imply a further waste of economic resources by continuing unprofitable a activities. The second issue means that new impaired assets will continue to emerge, although this risk is partly mitigated by the fact that stress tests performed under the majority of the programmes catered for the building up of adequate capital buffers.

However, the quite high levels of NPLs in programme countries and in other EU countries as well (e.g. Italy) call for continued efforts to ensure an adequate level of provisioning and management of NPLs. In general, the level of loan loss provisioning was strengthened in vulnerable countries to more conservative levels during their programmes and following the Supervisory Review and Evaluation Process conducted by the SSM. The best examples are Latvia and Hungary, where the provisioning levels reached about 75% and 60% respectively in the first half of 2013, but dropped somewhat afterwards (Graph III.1.7). In Cyprus, the coverage ratio of NPLs increased by about 3 percentage points following the Supervisory Review and Evaluation Process exercise in 2016.

A positive development of the coverage ratio is visible also in Greece, Spain and Cyprus despite the fact that the increase in NPLs is putting downward pressure on the coverage by provisions. This effect has also led to the decline in the provisioning ratios in Spain and Cyprus at the beginning of the cleaning-up of the banks' balance-sheets, but which recovered afterwards (Graph III.1.8).

Graph III.1.8: **Total loss provisions of impaired loans in euro area countries**

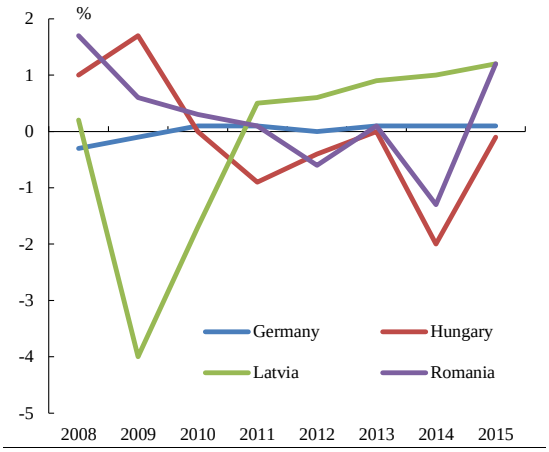


Source: ECB

Managing NPLs has become a key priority for banks in the vulnerable countries, in particular in those that didn't move legacy assets off balance sheet. Banks in Greece and Cyprus are taking

active measures to better organize their activity in order to administer the large portfolios of NPLs, including by creating dedicated departments for this task and complying with NPL management targets. Regulators are supporting this process by establishing specific legal frameworks to deal with troubled borrowers and actively restructure NPLs in a sustainable way. The central banks of Ireland and Cyprus have also put in place targets for the resolution of mortgage arrears, aimed at stimulating borrowers and creditors to reach viable and long-term solutions for debt restructuring.

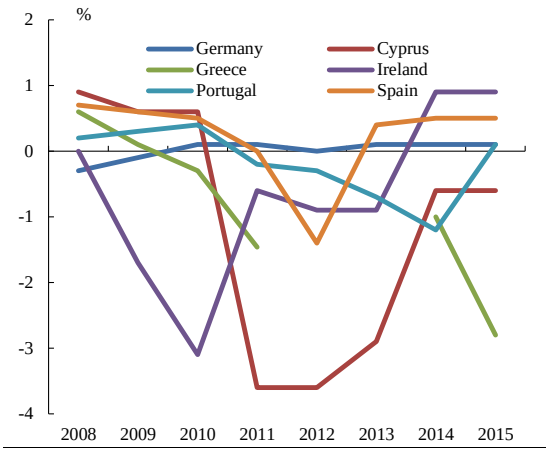
Graph III.1.9: **Banks' return on assets (%) in non-euro area countries**



Source: ECB

Bank profitability has stabilised in programme countries after banks had recorded large losses in the beginning of the crisis (Graphs III.1.9 and III.1.10). Greece is the only country where negative profitability in the banking sector remains quite pronounced given its prolonged recession and bank restructuring process. Overall, the banks' profitability prospects are seriously challenged by the low interest rate environment and the anaemic economic recovery. Both declining net interest incomes and still large impairments are burdening the banks' financial results. In particular the large amounts of tracker mortgages on the banks' balance sheets are hampering their profitability. In addition, compensation and litigation costs have weighed heavily on the banks' profit margins in countries such as Spain. At the same time, banks in some countries, such as Latvia and Ireland have returned to more robust profitability in 2014 and 2015. The positive development was facilitated by improving net interest income, higher income fees and lower operating costs. In Spain, the recovering of profitability benefitted from a drop in provisioning and non-recurring items, such as the income from carry trade with government securities. Nevertheless, as a result of persistent challenges, bank profitability continued to weaken further and remained unevenly distributed across programme countries in 2016.

Graph III.1.10: **Banks' return on assets in euro area programme countries**

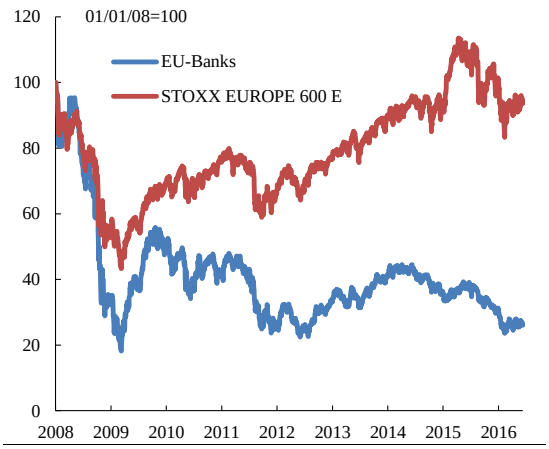


Source: ECB

Going forward, bank profitability is expected to strengthen once the provisioning activity moderates, banks are operating in a more cost-efficient manner and the economic recovery picks-up (see also chapter 2 of the European Financial Stability and Integration Review, European Commission, 2017). The evolution of net interest income remains under the influence of the still constrained lending activity while the interest rate margins are challenged by the zero interest rate boundary on deposits (see also chapter 2 in the European Financial Stability and Integration Review, European Commission, 2017).

1.2. MARKETS VALIDATE THE STABILISATION OF BANKS, BUT WEAK SPOTS REMAIN

Graph III.1.11: **Price indices of banks and other shares**



Source: Datastream

The stabilisation of the banking sector in the EU as a whole and in particular in the programme countries was assessed positively by investors and analysts alike. The increase in the market valuation of bank shares and an improvement of the ratings of banks, in general, bear witness to the return of confidence in this sector. This sub-chapter focuses on the evolution of stock-market prices for banks since the crisis.

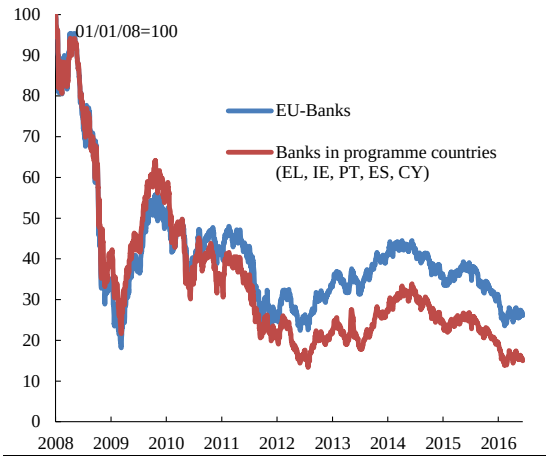
After the stock-exchange crash at the on-set of the great recession in 2008, general stock indices started to recover gradually as the monetary conditions were significantly eased and the EU economies returned to growth. Graph III.1.11 shows how the Stoxx Europe 600 Index reached again its pre-crisis level in 2015, after it had collapsed to about 40% of its peak valuation in 2008.

The price of EU bank shares followed the general market trend and recovered strongly during 2009. However, since the beginning of 2010, the market valuation of banks was much more volatile than for other sectors, reflecting the woes confronting the financial sector in Europe. A new correction in the price of bank shares took place during 2011 which was only overcome in second half of 2012 after the financial assistance programme for the Spanish banks was put in place and other unconventional measures to restore market confidence in the irreversibility of the euro and political initiatives to deepen the European Monetary Union (EMU) were undertaken. After having recovered during 2013-2014, bank stock fell again by about 30% since the second half of 2015. This sell-off did not come as a surprise as (i) the previous rally in bank shares was partly driven by investors in search for yield under very favourable central bank liquidity conditions, and (ii) the global perception of the economic prospects had worsened. In general, bank share prices have further declined amid high volatility also in 2016 when, over the summer, banking stock indices reached new lows.

Additional considerations formed the more pessimistic valuation of banks relative to the other economic sectors. While the liquidity and solvency of banks have overall been significantly strengthened over recent years, profitability of banks continues to be rather weak. In this respect, significant pressure comes from the slow and uneven economic recovery, the record-low interest rates and the relatively high ratio of NPLs and unfinished bank balance sheet clean-up in some countries. It is not by coincidence that bank shares declined the most in countries like Greece, Italy, Portugal or Spain. Asset purchases by the Eurosystem have contributed to a "flattening" of the yield curve. Therefore, the sheer profit of maturity transformation has been reduced, denting the profitability prospects of banks. But the most important factor which depresses the profitability of banks and their market valuation remains the low volume of business as the real economy doesn't generate sufficient solvent credit demand.

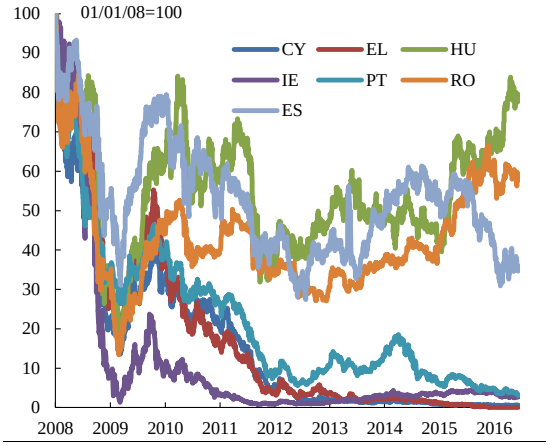
As regards the evolution of the stock prices of bank sectors in programme countries relative to the other ones, graph III.1.12 confirms that investors understood that the banking sectors were either directly contributing to the economic and financial woes in the programme countries or were indirectly impacted by them. As of 2012, the stock market valuation of banking sectors in the programme countries (Greece, Ireland, Portugal and Spain) was clearly below the average market valuation in the EU. Nevertheless, the two indices moved in parallel most of the time, showing that the general perception of the health of banks in non-programme countries was also depressed.

Graph III.1.12: **Price indices of bank shares in the EU and programme countries**



Source: Datastream

Graph III.1.13: **Programme countries' bank price indices**

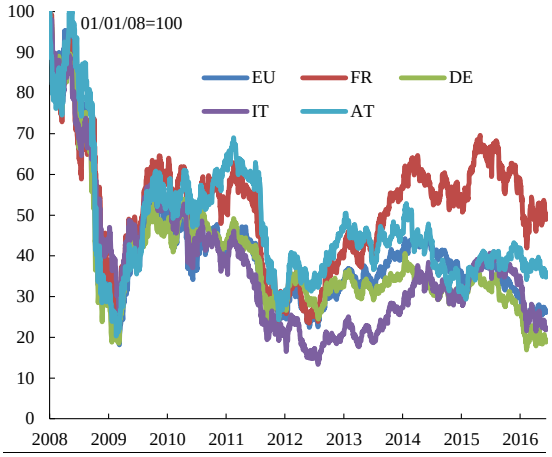


Source: Datastream

There were also diverging trends in terms of market appraisal of banks among programme countries (Graph III.1.13). One can note that despite high volatility for the share prices of all banking sectors, some countries managed to fare much better than others. Not surprisingly, stock prices of banks in countries like Hungary and Romania recovered a large portion of the dramatic losses recorded in 2008, because the original problems did not originate in the banking sectors and the two programmes were not targeted primarily at restoring the soundness of the financial sector. The Spanish banks find themselves somewhere in the middle of the ranking (because only the savings bank sector went into trouble in the boom years) whereas shares of banks in Greece, Cyprus, Portugal and Ireland have basically lost most of their pre-crisis value and haven't managed to recover much of it so far. The heavy discount seems to originate in the huge losses suffered by a majority banks in these countries which led to a substantial dilution of shareholder value.

A similar difference of valuation can be observed among certain countries that received a country-specific recommendation for the financial sector, i.e. Italy, Austria and Germany and countries without country-specific recommendations for the financial sector, such as France. Italy was among the first countries to start receiving financial sector country-specific recommendations in 2011, due to the large exposure of its banks to overleveraged sectors, resulting in a relatively high amount of NPLs. Germany and Austria also received financial sector country-specific recommendations as of 2011 and 2012, respectively with the view to restructure and consolidate some parts of their banking sectors, i.e. the Landesbanken in Germany and the (partly) nationalized banks in Austria. It is noteworthy that the price of bank shares in France (which didn't have a financial sector country-specific recommendation) has been consistently ahead of Germany, Austria and Italy from 2013 onwards (Graph III.1.14). At the same time it is less encouraging to see that the market interpretation of the health of these banking sectors had not changed for better until 2016, which raises the question of how well the recommendations were implemented with tangible results.

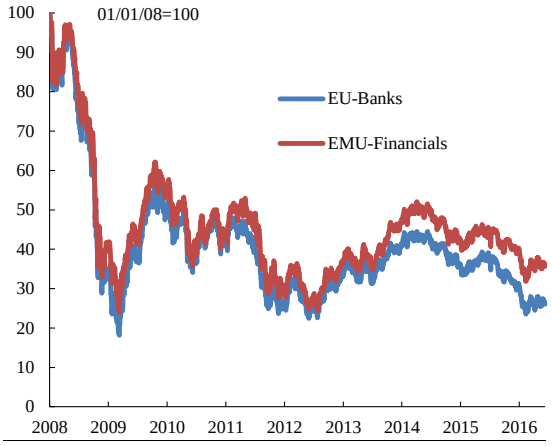
Graph III.1.14: **Country-specific recommendations and EU banks price index**



Source: Datastream

It is interesting to note that since 2013, there was also a split evolution of the price of shares in banks vs. financials (Graph III.1.15). The price of financials has clearly overtaken the one of banks, illustrating higher confidence in the soundness and profitability prospects of financial sector companies, such as insurance, asset management funds, , etc.

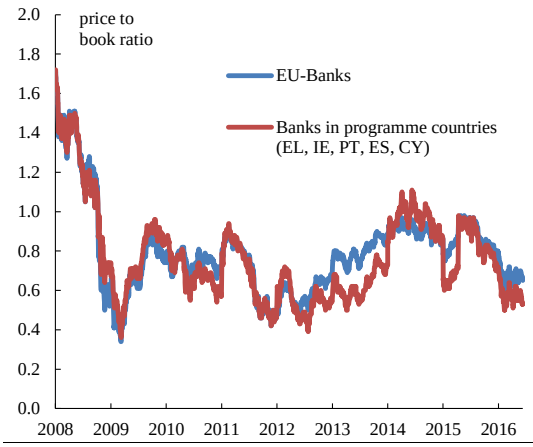
Graph III.1.15: **Price indices of shares in banks and financials**



Source: Datastream

The evolution of the price-to-book ratio for EU banks has mirrored to a large extent the evolution of share prices during the analysed time frame. Nevertheless, at some points in time, i.e. when banks strengthened their capital buffers on account of regulatory requirements and market pressure, the indicator was diving faster than the price of bank shares because there were some jumps in the denominator (Graph III.1.16).

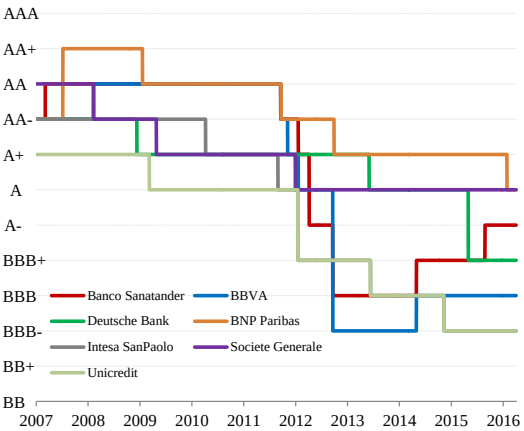
Graph III.1.16: **Price/book ratio for banks in the EU and programme countries**



Source: Datastream

Another useful way to gauge the evolution of confidence in banks is to look at their rating. As there is no index to track the evolution of credit ratings of EU banks, we looked at a sample of relevant credit institutions. Like in the case of shares, one can note a worsening of credit ratings before the first half of 2013, followed by a gradual and uneven recovery afterwards (Graph III.1.17).

Graph III.1.17: **S&P Long-term foreign issuer credit**



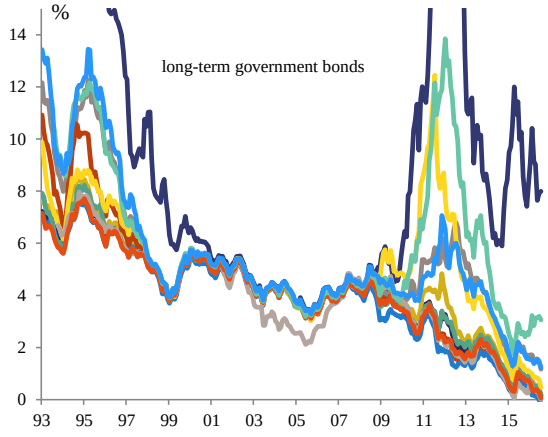
Source: S&P

In conclusion, markets and analysts have by and large validated the stabilisation of banks, but the volatility of the banks' price shares points to weak spots remaining – the need to continue the balance sheet repair and reduce NPLs for some banks and the rather weak bank profitability prospects which are not supported by a more dynamic economic recovery.

1.3. STABILISATION OF GOVERNMENT INTEREST RATES WITH REAPPEARANCE OF THE RISK PREMIUM

Between 1998 and 2008 euro area government bond yields differed only by a few basis points. The remaining small yield differences could be explained by a liquidity premium between e.g. less tradable Austrian bonds vis-à-vis the German bund (Graph III.1.18). After the financial crisis, markets imposed different bond rates in individual European countries based on a reassessed probability of default.

Graph III.1.18: **Re-differentiation amongst sovereigns as before the start of EMU**



Source: ECB

In forming the European Economic and Monetary Union sovereign nations allowed their bonds to be denominated in a currency they do not control. When financial markets realised that Greece was at risk of defaulting they began to price risk premiums into each countries' bonds which precipitated the start of the euro area debt crisis.

The banking crisis since 2008 added to the financing pressures of governments. Public support for ailing banks dramatically brought to the fore contingent liabilities sovereigns bear with their domestic banks. Recapitalisations and liquidity support worsened several countries' debt increasing their refinancing cost. In turn falling sovereign bond prices weakened their holders, oftentimes domestic banks.

During the sovereign debt crisis this negative feedback loop between banks and their respective sovereign has been widely exposed, as a failing banking system can bring down a fiscally sound sovereign (Ireland) or the other way round (Greece). In response, Europe took action: *"We affirm that it is imperative to break the vicious circle between banks and sovereigns."* (European Council Summit, 2012, press statement, 29 June).

Subsequently, the creation of Banking Union, enhanced country surveillance and an accommodating monetary policy have been major game changers. Since summer 2012 euro area government yields (Graph III.1.18) are converging again as unfounded redenomination fears have been taken out of the market. Consequently, several sovereign borrowers who lost access to capital market re-entered through ever longer maturities at lower rates. But unlike in the decade spanning from 1998-2008, yield differences remain.

1.4. DIFFERENT PATHS WERE TAKEN FOR DIFFERENT SETS OF COUNTRIES IN STABILIZING GOVERNMENT YIELDS

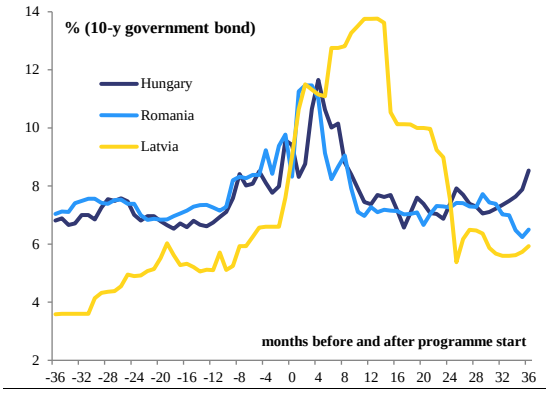
When analysing the countries whose governments had difficulties in accessing financial markets due to the crisis, three distinct groups emerge with respect to interest developments. First, the non-euro area countries (Hungary, Latvia, Romania) applied for balance of payment support to overcome their inability to access international capital markets after which, government yields eased quickly upon programme start. Second, in the Member States (Greece, Ireland, Portugal), heavily affected by the crisis in 2010-2011 and keeping only access to the short-term treasury bill market, it took longer for government yields to normalise partly because of contagion. The problems of the third batch of countries (Cyprus,

Spain, Slovenia, where only Cyprus lost access to capital markets) were shaped around their banking sector. Difficult negotiations and delayed action led to high and volatile sovereign yields in 2012-2013 which came down quickly, when action was taken.

1.4.1. The three early East European countries

Losses suffered during the sub-prime crisis and rising risk avoidance after Lehman's collapse plunged several Member States from Eastern Europe into a typical emerging market crisis. A sudden stop of capital inflows cut off Hungary, Latvia and Romania from the necessary funds to finance their current account deficit. In response, the EU together with the International Monetary Fund, offered bridge financing.

Graph III.1.19: **Non-euro area programme countries: rather quick turn-around in government bond yields**



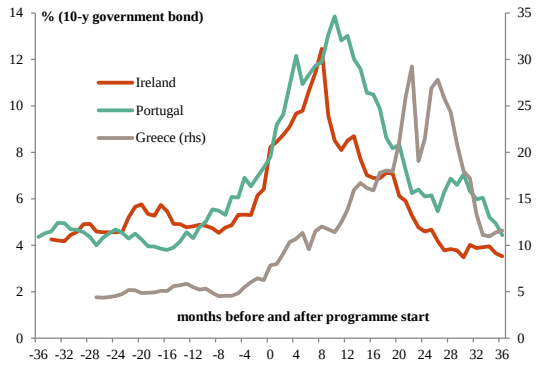
Source: ECB, Eurostat

The three countries lost access to the euro-denominated capital markets, but continued issuing both at the short and long end in the domestic market, sometimes at double-digit interest rates. In Hungary and Romania sovereign rates turned around a few months into the programme (Graph III.1.19) on the back of good reform efforts and renewed growth. In Latvia, nominal interest rates continued climbing in fear of a significant devaluation of the Latvian lat. However, Latvia's government decided to pursue its euro peg to avoid hurting borrowers in foreign currency which was mainly the euro. Later in the programme, the prospects of euro adoption (2014) and a rigorous implementation of the programme helped bringing down 10-year bond yields from a spike at 13.75 % during the last quarter in 2009 to half by programme end in early 2011.

1.4.2. The height of the euro area crisis

Greece's solvability had been seriously questioned by a significant upward revision of its 2009 deficit from 3.7% to 12.7% of GDP in February 2010 and the euro area governments stepped in via bilateral loans. The track record of programme implementation combined with a constant flow of negative news mainly about faulty statistics and an ever bigger fiscal deficit ([1]) caused the yields on Greek bonds to pursue their climb. Many market participants no longer believed in Greek debt sustainability despite the combined EU/IMF rescue. Only in 2012 a new government produced a reform agenda in Athens and as Greek deficit figures started to move closer to planned figures yields started to fall. In the wake of the end-2014 election results and the incoming government's policies combined with "Grexit" fears sovereign interest rates spiked again.

Graph III.1.20: **Greece, Ireland, Portugal: delayed reaction in government bond yields**



Source: ECB

The Greek crisis has set the scene for other countries in financial difficulties. Many market participants thought as well that Ireland and Portugal were to default eventually and sold their debentures. Contrary to the three East European countries it delayed the decline of the sovereign yields. But around the publication of the second review report, yields for both countries turned around and faith in their bonds returned gradually.

([1]) Greece 2009 deficit finally turned out to be 15.4% of GDP.

This underlined the benefit of strict programme implementation.

Unlike the non-euro countries, the sovereigns of the three countries most affected by the euro crisis, stopped issuing bonds until the end of the programme. Greece's last regular 10 year bond auction took place in October 2008 yielding 4.9% at times when its spread versus the bund was already 105 basis points. Later yields peaked at 30% (Graph III.1.20) In April 2014 Greece re-entered bond markets with a 5-year bond yielding less than 5% on hopes that no further financial assistance would be required, but this proved wrong as in August 2015 a third externally supported economic adjustment programme entered into force. Ireland didn't issue any long-term bonds between the third quarter in 2010 and January 2014. With 2.7% the May 2014 issue's yield is half of the last 10-year bond's yield before the Irish programme started.

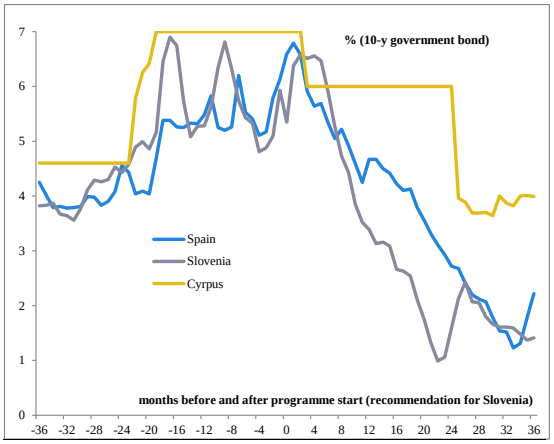
Portugal issued a 10 year bond in January 2011 yielding 6.7% before entering a 3-year EU/IMF adjustment programme in April 2011. The country stayed in the market with monthly Treasury bill auctions ranging from 3 to 18 months maturities, and only in April 2014 the Portuguese Republic issued again a 10-year bond at 3.6%. Since then, rates have increased, in particular after the 2015 elections leading to a government which was believed to slowing down the reform momentum.

1.4.3. The banking crisis countries

After Ireland three more sovereigns suffered from the perceived fragility of their financial sector. Amongst the eight countries that received external financial assistance, only Spain continued to issue long term bonds in euro. Slovenia never formally entered a programme, but the 2013 country-specific recommendations demanded a comprehensive stress test on its banking system.

In Spain, Cyprus and Slovenia credible stress tests on their banking systems were the basis for a recapitalisation of their banks. The so created trust brought down their sovereign yields quickly after remaining high and volatile in the prolonged run-up to the decision on taking action (Graph III.1.21).

Graph III.1.21: **Cyprus, Spain, Slovenia: prolonged volatility before decision and quick decline in government bond yields**



Source: ECB

Spain's programme covered the period from mid-2012 until end-2013 but disbursements of financial assistance were only used to recapitalise banks, whereas funds to repay maturing bonds and to cover the government deficit continued to be raised on international capital market. Spain's central government's market access kept intact during the crisis but some of the autonomous regions were no longer able to issue.

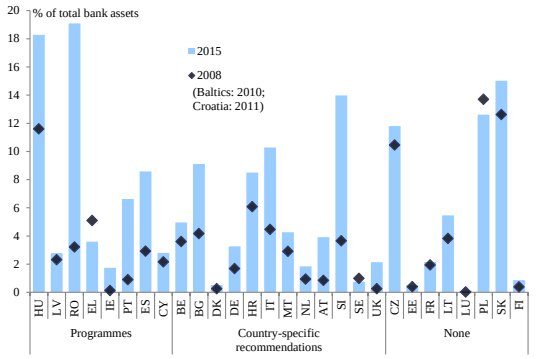
Cyprus issued its last 10-year bond in August 2011 at 6.5% and financed itself through mainly short-term issues and a loan from Russia during the protracted negotiations to conclude a programme. Just after programme start in July 2013 Cyprus re-entered capital markets with a EUR 100 million issue at 6% to test confidence. Interest rates declined, but there is little trading in the small Cypriot market and spreads remain sizeable.

Slovenia never lost market access but stopped to issue long-term in EUR when its secondary market yield dissociated from European countries in the second quarter of 2011 (Graph III.1.21). Instead it issued at nominally lower interest rates in USD, fully accepting to bear the exchange rate risk. In late 2013, the European Central Bank, the European Banking Authority, the European Commission as well as Slovenian authorities communicated on the results of the stress tests. Thereafter, with uncertainty largely reduced, yields started to normalise and Slovenia returned to issue.

1.5. THE BANK SOVEREIGN NEXUS

In the euro area a renationalisation of government debt took place. It led to a strengthening of the bank sovereign nexus, potentially leading to dramatic economic and financial consequences in the case of policy action on the debt front when a lot of government securities are held by banks. The prime illustration of this effect is the Private Sector Involvement in Greece in early 2012 (Box III.1.2).

Graph III.1.22: **Government debt in percent of domestic banks' total assets**

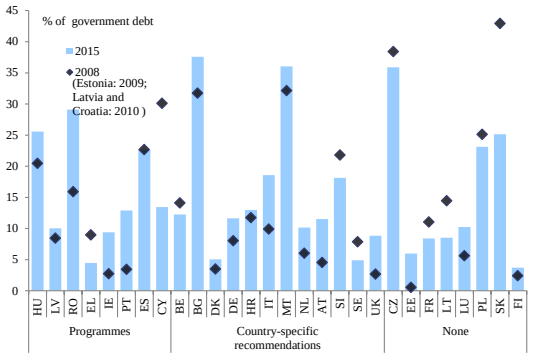


Source: Ameco, ECB

In most countries, domestic banks now hold more national debt in percent of total assets than 2008 (Graph III.1.22) because generally bank assets shrunk and government debt grew. This increased nationalisation was more pronounced in Italy, Spain, Portugal and Ireland as foreign banks off-loaded the debt of these countries during the crisis. In the Baltics little change can be observed as their integration into the EU saw a broadening of their investor base. Nevertheless, the non-euro area programme countries Romania and Hungary saw a pronounced renationalisation of their debt as foreign investors not only face credit risk but have to bear the currency exchange risk as well.

If one is to compare domestic banks' share of total government debt, a similar picture emerges of a reinforced link between the two sectors (Graph III.1.23). Some countries (Slovakia, Slovenia) who joined the euro area between 2007-2015 benefited from a wider international investor base but the share of government debt with the banks remained high. To be noted is also the now small share of Greek government debt held by domestic banks. Following the different assistance programmes, most of Greek debt is now with the EU and the IMF (Box III.1.2). To a lesser extent this is also the case in Cyprus.

Graph III.1.23: **Domestic banks share of total national debt**



Source: Ameco, ECB

Overall, the sovereign-bank nexus increased from the asset side of the banks as they hold relatively more government debt and from the capital side. Several governments had to come to the rescue of their financial sector implying a fiscal burden if the State aid is not recouped (Graph II.2.3 in chapter II.2). It puts the sharp reduction of government holdings by Greek and Cypriot banks in another light.

Box III.1.2: **The private sector involvement in Greece: the devastating impact of the bank-sovereign loop**

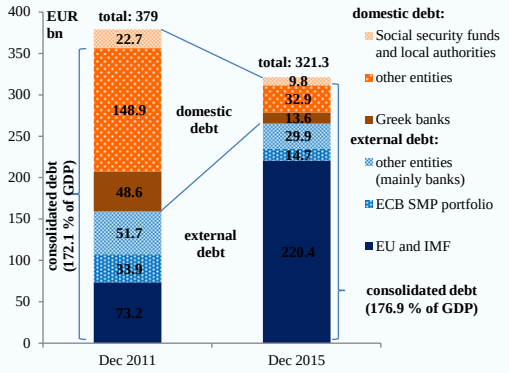
At the Euro Summit of 21 July 2011, a new financial support programme was outlined for Greece to cover the country's financing needs until mid-2014, including the participation of the private sector. The Euro Summit statement of 26 October 2011 welcomed a greater involvement of the private sector, in order to achieve a deeper reduction of Greek debt. Finally, on 21 February 2012, the Eurogroup acknowledged the common understanding that has been reached between the Greek authorities and its private creditors on the general terms of the debt exchange offer.

Private sector holders were offered to exchange eligible bonds for (i) new Greek government bonds with a face value of 31.5 % of the face amount of their exchanged bonds and a maturity date of 30 years, (ii) notes from the European Financial Stability Facility with a maturity date of two years and having a face value of 15 % of the face amount of their exchanged bonds and (iii) detachable GDP-linked securities issued by Greece. In addition, private investors received short term bills from the European Financial Stability Facility for the accrued interest of the exchanged Greek government bonds at the settlement date of the exchange. This offer provided for a nominal haircut amounting to 53.5% and represented a considerable debt relief for the government at the moment which could, however, not be maintained as the inflicted losses on banks required public recapitalisation. The estimated net present value loss from the debt exchange was estimated on average at 78% for the bonds held by the Greek banks.

From a total of EUR 205.5 billion of Greek sovereign bonds eligible to the exchange offer (out of a total non-consolidated of EUR 379 billion, see graph), Greece received tenders for exchange and consents from holders of EUR 199 billion of bonds, including through an exercise of collective action clauses, representing 96.9% of the outstanding face amount of these bonds.

The nominal amount of the exchanged bonds held by the Greek banks was EUR 48.6 billion. As a result of the debt exchange, Greek banks suffered losses of about EUR 37.7 billion (about 170% of their total Core Tier I capital at that time), out of which EUR 5.8 billion had already been recorded in the June 2011 financial statements.

Graph 1: **The composition of Greek government debt after the Private Sector Involvement**



Source: Bank of Greece, Greek public debt bulletin,

Throughout 2012, the Bank of Greece monitored closely the capital position of the Greek banks. A capital assessment was initiated in January 2012 and the capital needs for all Greek banks were estimated in May 2012 at EUR 40.5 billion (of which EUR 27.5 billion for the four systemic banks).

In order to ensure their adequate capitalisation, the Hellenic Financial Stability Fund ensured a bridge recapitalisation of the "core banks" in two steps: banks received a first capital advance of EUR 18 bn on 28 May 2012, followed by a second capital advance of EUR EUR 6.3 billion on 20 December 2012. Finally, after the four systemic banks completed their share capital increase in May and June 2013, the total Hellenic Financial Stability Fund contribution to the recapitalisation of the four systemic banks increased by EUR 0.7 billion and reached a total of EUR 25.0 billion.

(Continued on the next page)

Box (continued)

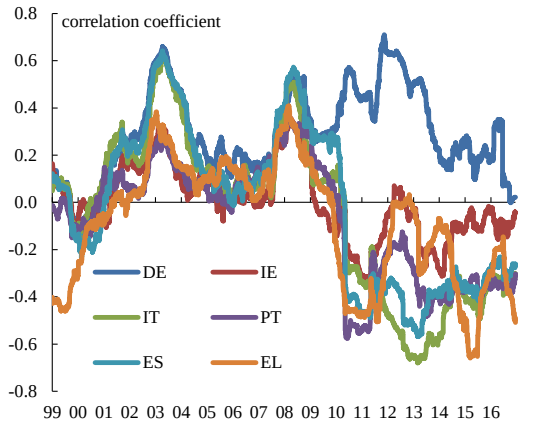
In the course of 2012 and 2013, twelve distressed banks, including two major state-controlled banks (ATEbank and Hellenic Postbank), were resolved within an enhanced legal framework. The contribution of the Hellenic Financial Stability Fund to the funding gap and the capitalisation of the transitional credit institutions reached EUR 12.3 billion.

Taken together, the Private Sector Involvement permitted to reduce Greek debt by about EUR 106 billion (= 53.5 % haircut on EUR 199 billion bonds exchanged), but a significant part evaporated through the debt contracted to recapitalise or resolve banks. The public debt stemming from the intervention of the Hellenic Financial Stability Fund (about EUR 37.3 billion) is, however, not only due to losses related to the Private Sector Involvement, but covers also losses from the parallel increase of non-performing loans.

Not only Greek banks suffered from the fall-out of the Private Sector Involvement. While for the large EU banks the holdings of Greek debt represented a small part of their portfolio, the EUR 4.7 billion held by Cypriot banks in 2011 appeared more difficult to manage and the losses incurred, together with other home-grown problems led Cyprus to ask for an external assistance programme.

Prior to 2010, the correlation between banks equity price and sovereign yields was positive. Higher government bond interest rates was not seen as a sign of stress, but reflected the rate of return in a growing economy and for the banks it meant a higher intermediation margin benefitting banks' earnings capacities boosting their equity prices.

Graph III.1.24: **Correlation between sovereign yield and bank equities**



Source: Datastream, Thomson Reuters

This correlation inversed in Greece, Italy, Spain and Portugal at the start of the Greek crisis in April 2010 (Graph III.1.24) as well as with Irish banks a bit earlier around Lehman's collapse. During the sovereign crisis higher yields indicated heightened perceived sovereign credit risk. Falling bond prices impacted banks results and caused equity notations of weaker banks to fall. Vice versa, when one or more banks incurred big losses, causing their equity prices to fall, it sparked sovereign yields in fear that banks had to be saved with public money. By contrast, German banks, benefitting from a strong sovereign, have kept their positive correlation as German federal yields and equity prices declined in tandem (Graph III.1.24). While remaining negative, the correlation between bank share prices and sovereign yields weakened in high-debt countries with a fragile banking sector when the concerted policy action gained momentum in 2012-2013. Where banks assets are diversified cross-border, there is little reason why healthy banks' credit risk should be strongly correlated with its respective sovereign (Thiel, 2014).

2. THE FLOW OF CREDIT TO THE ECONOMY

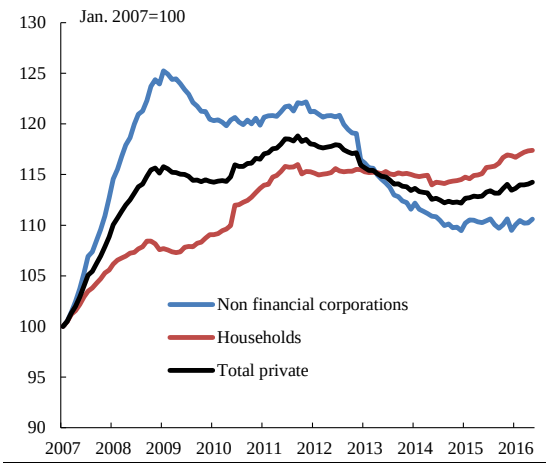
This chapter looks at lending developments through the crisis years. The focus is on financial intermediation in the EU Member States and how financing became increasingly fragmented along national borders. The policy response is explored to alleviate credit supply strains on the small and medium-sized enterprises and whether and how alternative financing mechanisms have supplemented bank credit. This is more thoroughly addressed in the Commission Action Plan to establish a Capital Markets Union (European Commission, 2015b).

2.1. LENDING CONDITIONS IN A FRAGMENTED MARKET

2.1.1. Deleveraging needs dominate lending developments during the crisis years

The weak economic activity during the financial crisis led to a further rise in debt ratios (see chapter II.7), which are slow to come down. The debt-to-GDP ratio of non-financial corporations started moderately to decline at the end of 2009 from a peak at 81% compared to 57% of euro area GDP in 1999. Households' debt-to-GDP ratio continued to increase up until the first half of 2010 (67%) when it started to stabilise and slightly decrease.

Graph III.2.1: **Recent changes in the stock of credit provided to the private sector in the euro area**



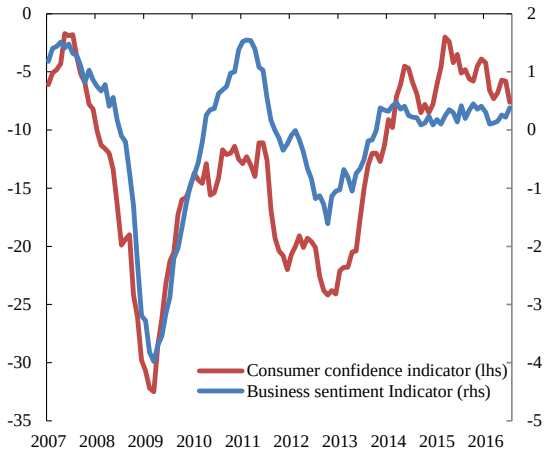
Source: ECB

Following a banking crisis it takes time to reduce the debt overhang (Tang and Upper, 2010) and clean up balance sheets which are pre-conditions before there is any significant resumption of lending. As a consequence, new credit to the economy, in particular to firms, fell sharply in the aftermath of the Lehmann Brothers crisis in 2008-09 and again following the sovereign debt crisis in 2012-13 (Graph III.2.1) and has remained subdued since.

2.1.2. The lack of demand weighs on credit growth

The strong decline in economic activity over 2008-2009 and the loss of confidence among firms and consumers (Graph III.2.2) led to a substantial fall in demand for credit for investments and working capital by non-financial corporations and a slowdown in mortgage requests by households (Dées *et al*, 2011). Mergers and acquisitions, which are traditionally debtfinanced, declined considerably over the same period, also contributing to firms' reduced demand for external financing and new loans from banks (Graph III.2.2).

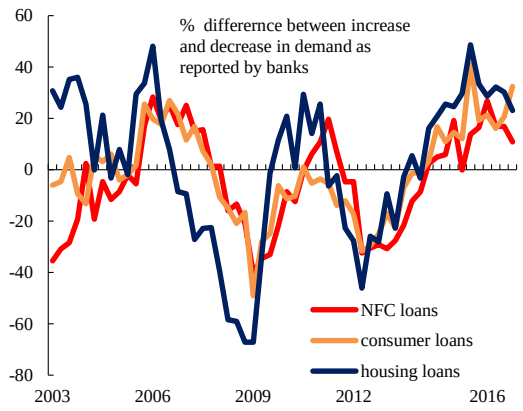
Graph III.2.2: **Business and consumer confidence indicators in the EU**



Source: European Commission

The missing demand for credit is also apparent when looking at the euro area bank lending surveys (Graph III.2.3). Banks surveyed reported a decline in demand for corporate loans in the timeframe 2008 until the first half of 2010 and again in the second half of 2011, when the sovereign debt crisis became acute.

Graph III.2.3: **Demand for loans in the euro area**

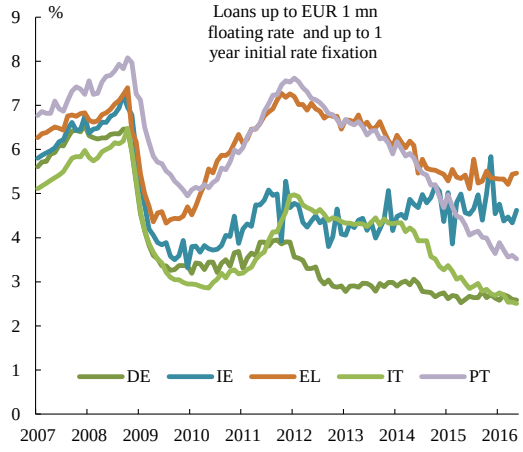


Source: ECB

2.1.3. A fragmented euro area financial market

In addition to demand factors, which were heavily influenced by the divergent growth developments across countries, the divergences in bank lending trends reflect heterogeneous supply-side factors such as the heightened risk aversion of banks, increasing non-performing loans, scarce capital and the financial solidity of the sovereign.

Graph III.2.4: **Diverging borrowing rates made it difficult to finance new ventures**

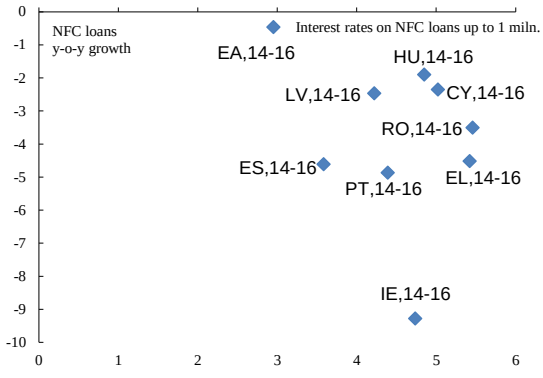


Source: ECB

Bottlenecks in the supply of credit dampens economic activity because viable and profitable business ventures cannot be financed, which would otherwise help the economy to grow. Banks tightened terms and conditions on bank credit mainly by asking borrowers for shorter maturity and better collateral leading corporations to respond by cutting fixed investment and destocking in an effort to improve their financial balance.

Higher yields on public debt spill-over to increased funding costs for banks. In parallel, the monetary transmission in stressed markets inside and outside the euro area remained impaired for a relatively long period, starting back in 2009 and even increasing during the peak of the sovereign debt crisis in 2011-2012 because risk considerations impeded the transmission of lower interest rates through the banking sector to the real economy. In consequence, lending rates in these economies have been substantially higher relative to the euro area average. The divergence in borrowing rates between German and Spanish, Italian, and Portuguese corporates was significant and reached levels from 100 to 400 basis points (Graph III.2.4), between others reflecting increased liquidity and credit risks.

Graph III.2.5: **Loan growth and interest rates, a story of fragmented markets**



Source: ECB

This fragmentation in lending conditions has led to a strong rise in cross-country heterogeneity in credit and growth developments, especially between stressed and non-stressed euro area economies (Altavilla et al, 2015). Compared to the average in the euro area, programme countries experienced a notably sharper contraction in credit

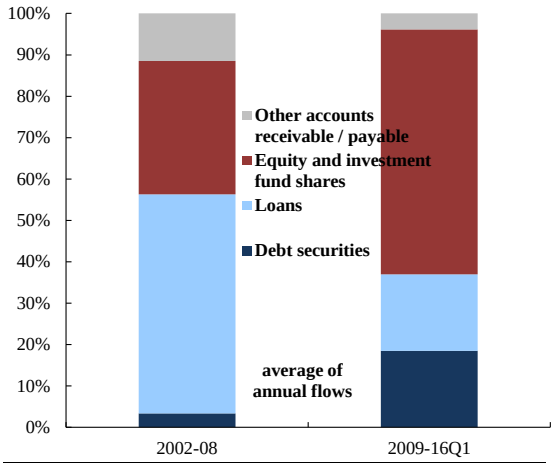
growth linked to, among other, diverging trends in borrowing costs (Graph III.2.5).

2.2. LOOKING FOR EXTERNAL FINANCING

2.2.1. The crisis as catalyst to move away from bank credit

Over the past decades European firms have typically relied on bank lending to finance their fixed investment and working capital needs. Before the financial crisis, the share of bank financing in total non-financial corporations' annual funding stood at around 50% on average in the euro area (Graph III.2.6). Since the banking crisis credit availability became scarcer and firms were pushed to look for alternative ways of financing their business. As a consequence, the share of bank lending over the financial crisis years dropped to about 20% of total corporate funding, implying that alternative financing sources gained momentum in many Member States.

Graph III.2.6: **Comparing consolidated financing flows to firms in the euro area before and after the crisis**



Source: Eurostat

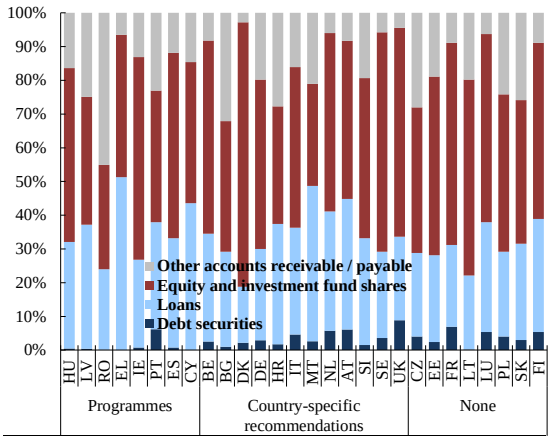
The primary form of financing of European firms became market and non-market-based equity financing i.e. reinvestment of earnings, owner's equity financing which in total doubled in importance to almost 60% of annual financing needs compared to the period before the financial crisis. Also, the issuance of debt securities increased remarkably between the pre-crisis period, when it stood at less than 5% and the crisis and immediate post-crisis period, when it accounted for almost 20% of corporate financing.

Similarly, accounts receivable and payable, including trade credits and intercompany loans is a relevant source of finance. Looking at the relative importance of this financing source it has decreased in importance since the crisis. Trade credit is directly linked to the exchange of goods and services and as such, generally its flows are closely related to the economic cycle. Loans from non-financial intermediaries include lending by leasing companies or financial subsidiaries set up to issue debt securities on behalf of the enterprise group. These loans have played a very mixed role across euro area countries. At an aggregated level, this type of loans declined in the first phase of the financial crisis and recovered starting from 2011 playing a role in the replacement of bank credit.

2.2.2. Different patterns in EU Member States

Depending on the financing structure, the effect of seeking alternative sources of financing differed noticeably across euro area countries. Notwithstanding many difficulties faced by credit institutions, in programme countries bank credit remains a relatively important source of finance (Graph III.2.7). Equity and extensive use of previously accumulated profits was in turn particularly relevant to Irish, French, Belgian, Danish, Swedish and UK companies. Debt securities in turn, increased substantially in Portugal, France, the Netherlands and Austria whereas inter-company lending temporarily became more significant in Germany.

Graph III.2.7: **The funding structure of corporates in EU Member States, 2015**



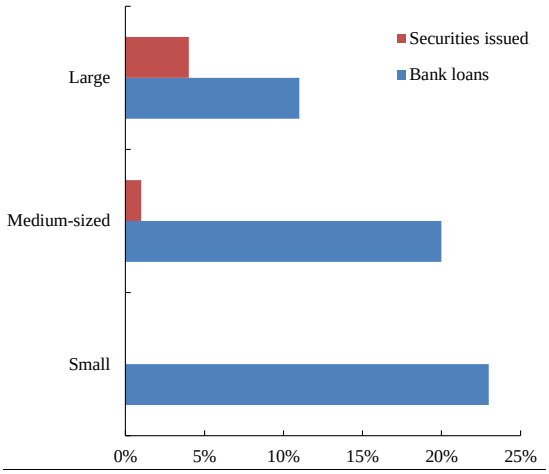
Source: Eurostat

Trade credit appears to have acted overall as a buffer in some countries, often in Central Europe, mostly through extended payables/receivables timeframes. Besides the typically circumstantial factors this divergent developments are related to structural factors that vary across countries, such as the importance of micro enterprises and small firms with limited access to market financing notably in some Central and East European Countries as well as Portugal, Cyprus and Italy, the importance of financial linkages between firms and differences in traditional corporate financing patterns.

2.2.3. The small and medium-sized enterprises remain dependent on banks

The decline in bank financing was primarily driven by large enterprises looking for diversifying their funding structure away from loans provided by financial intermediaries. By contrast, small and medium-sized enterprises, which are the backbone of the European economy and represent over 99% of firms in the EU, continued to be financed predominantly through bank credit as most of them found few alternatives to loans and were not able to tap the capital market directly (Kaya, 2014). The share of bank loans as percentage of balance sheet is inversely related with size of the firm (Graph III.2.8). While bank loans constitute close to one fourth of small and 20% of medium-sized firms' balance sheets they represent only 10% of the balance sheet total of large firms. By contrast, debt securities issued account for barely 1% of medium-sized firms' balance sheet against 4% for larger non-financial corporations illustrating the difficulty of small and medium-sized enterprises to raise funds directly from investors. Small companies do not issue market debt.

Graph III.2.8: **Bank loans and securities as percentage of balance sheet in 2013**



Source: BACH database, Deutsche bank research

Tapping bond or organised equity markets was therefore not a viable option for the overwhelming majority of small and medium-sized enterprises. The narrow set of financing sources made therefore small and medium-sized enterprises more vulnerable to changing conditions in credit markets. According to the SAFE survey on the access to finance of small and medium-sized enterprises in the euro area (Doove *et al.*, 2015) 16% of small and medium-sized enterprises considered that collateral requirements imposed by banks increased and were high but outright rejection rates on loan applications dropped. Nevertheless, rejection rates remain elevated, in particular in some euro area countries such as the Netherlands (25% of bank loan applications were rejected), Ireland (17%), Greece (16%) and Lithuania (15%) against a euro area average of about 8%. In addition to the problem of collateral requirements some businesses still received less financing than requested or had to decline loan offers due to their high costs and/or tight conditions. As a result, over a quarter of small and medium-sized enterprises did not get all of the financing they asked for from their banks in 2015.

2.3. POLICY ACTIONS TO DIVERSIFY FINANCING OPTIONS FOR SMALL AND MEDIUM SIZED ENTERPRISES

The crisis left a major mark on the small and medium-sized enterprises. Nearly all EU countries have seen aggregate company numbers fall over the crisis years (Vetter *et al*, 2014). Insolvencies, voluntary liquidations have reached record levels, in particular in programme countries. According to Eurostat, out of 100 enterprises with at least 10 employees doing business in 2008, by 2012 only 69 remained operational in Spain, 79 in Portugal and 77 in Ireland.

The financing problems of small and medium-sized enterprises have led to public authorities interventions to overcome the obstacles and enable the survival of viable companies. The regulatory activity has taken place notably in those countries where bank lending to small and medium-sized enterprises worsened the most during the crisis (Holton *et al*., 2013). Policy measures can be classified either as measures aiming to improve the flow of bank credit or policies aiming to stimulate the development of non-bank sources of finance for small and medium-sized enterprises (Table III.2.1). These policy actions have been further accelerated and streamlined in the Commission's Action Plan for creating a Capital Markets Union, launched at the end of 2015.

Table III.2.1: **Policy measures to boost financing small and medium-sized enterprise as two separate clusters**

Policies stimulating bank credit flows	Policies directed to non-bank funding
Government guarantees on default risk in SME loans	Peer-to-peer lending platforms, crowdfunding
Lending targets assigned to banks	Fostering the development of retail bond markets
Credit mediation	Direct government lending to SMEs
Guarantees for exporting companies	Direct export financing
Enabling/facilitating securitisation of SME loans	Address the debt bias in taxation

Source: European Commission

The most widespread measure has been enhancing loan guarantee systems to support credit or targeted equity financing to small and medium-sized enterprises. The vast majority of these loan guarantee systems were in place before the financial crisis. Member States have often broadened the scope of existing schemes and increased the allocation of public funds, in some cases with the participation of the European Investment Bank or the European Bank for Reconstruction and Developments for Member States in Eastern Europe, or sometimes through state owned banks and other public companies (Infelise, 2014). The aim of these loan guarantees is to enable banks to offer loans at favourable rates to struggling small and medium-sized enterprises.

Governments also provided funding directly to the sector of small and medium-sized enterprises either through a state owned or partially state owned financial institution, or through the provision of funds which are leveraged by private sector investors. Both forms of intervention are common across EU Member States (Darvas, 2013). Portugal set up a development financial institution by the end of the programme (2014), whereas in other countries existing promotional banks took an active role in directing funding to small and medium-sized enterprises. A small scale example of direct provision of funds is Microfinance Ireland (2012), with total funding of EUR 90 million over a 10 year project horizon. It was established to provide loans of EUR 25,000 or less to small Irish enterprises.

Other and less widespread policy measures at national level have addressed the corporate bond markets and alternative financial instruments for small and medium-sized enterprises. The ExtraMOT PRO segment of the Italian stock exchange was created in February 2013 in order to promote external financing of small and medium-sized enterprises through bond issuance. Italy introduced fiscal incentives for the issuance of minibonds by unlisted firms in 2012. Similarly, in October 2013, Spain initiated the Alternative Fixed-Income Market (Mercado Alternativo de Renta Fija – MARF) specifically for trading bonds of small and medium-sized enterprises, whereas Portugal simplified its legislative framework around the issuance of commercial paper to open this financing avenue for its small and medium-sized enterprises.

The efficiency of public financing solutions to small and medium-sized enterprises can be leveraged through private sector involvement, namely by banks to overcome the lack of skills and experience in assessing and managing risks. Private involvement reduces incentive problems and moral hazard that otherwise may arise in the

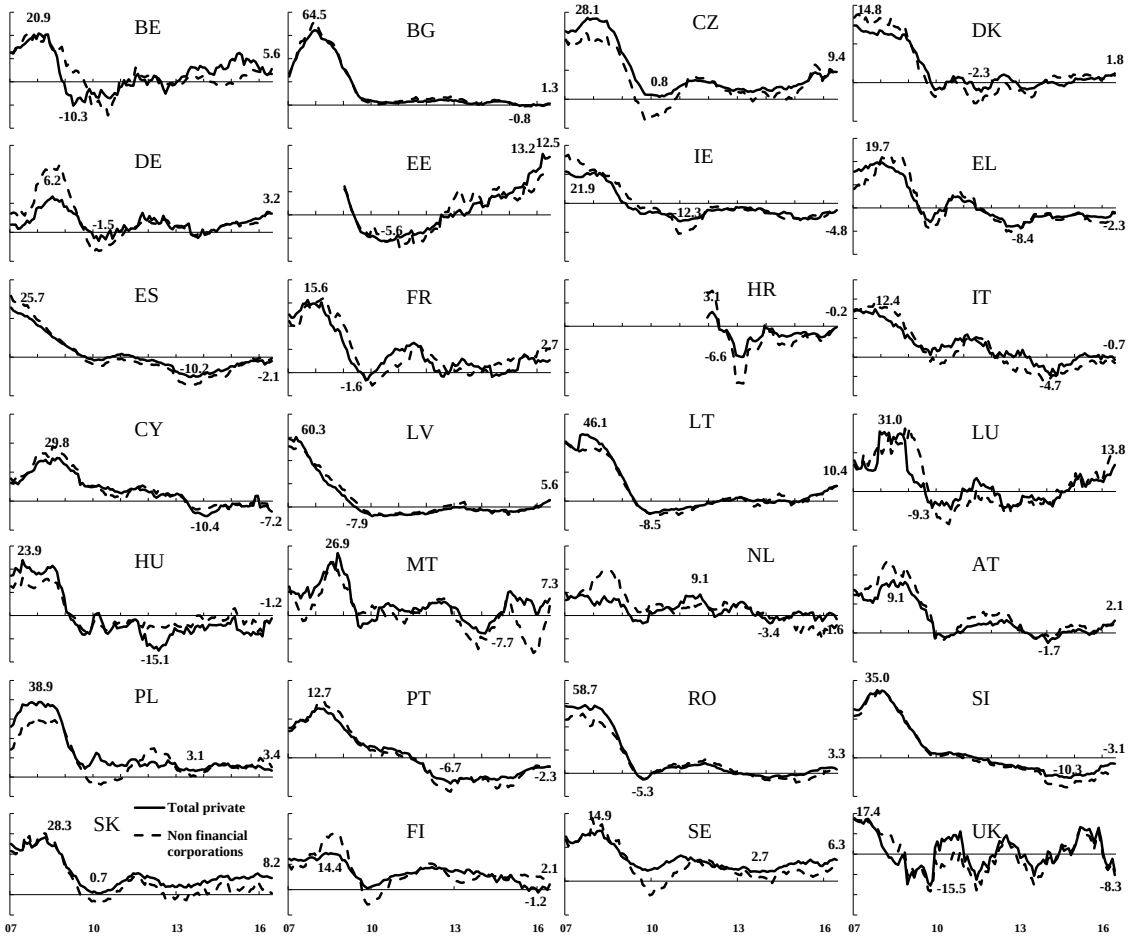
distribution of loans. Public intervention may lead to misallocation of funds where credit decisions are politically driven instead of commercially. Overall, as confirmed by the OECD and the World Bank, initiatives that share the commercial risk of loans between the private and the public sector or in which the authorities grant loans through banks seem to be more likely to reach the viable and creditworthy small and medium-sized enterprises. In order to ensure that banks have a sufficient financial interest in monitoring the loans, it appears important that they hold a portion of the securitized assets backed by small and medium-sized enterprise on their balance sheet.

2.4. CONCLUDING REMARKS: LENDING GROWTH REMAINS SUBDUED AND ALTERNATIVES ARE SLOW TO PICK UP

In the aftermath of the banking crisis, only few Member States (Czech Republic, Poland, Slovakia and Sweden) were saved from an overall credit contraction and none escaped a reduction in corporate lending (Graph III.2.9). Bank credit to firms sharply contracted or was for a long period declining not only in the programme countries such as Spain, Ireland, Portugal, Hungary, Cyprus and Greece, but also in Belgium, Croatia, Italy, Malta, Slovenia and the United Kingdom.

Overall, lending growth remains subdued in 2016 trailing behind pre-crisis levels and displaying great diversity among EU Member States. In about 10 countries credit to households and firms is still declining, while in about an equal number

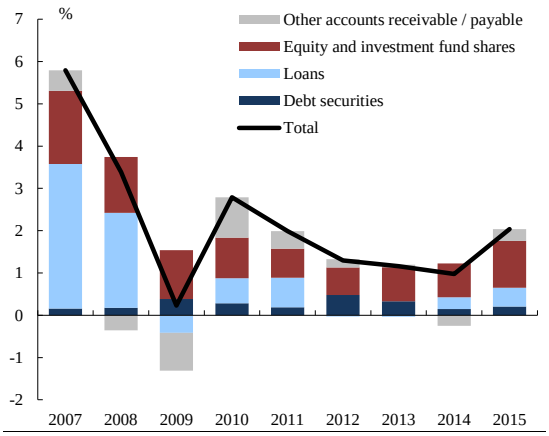
Graph III.2.9: **Total credit growth in EU Member States**



Source: ECB

(including the Baltics, Sweden and some East European countries) credit is already expanding at an annual rate of more than 5% (Graph III.2.9).

Graph III.2.10: **Flows of corporate financing in the euro area**



Source: Eurostat

Against the faltering availability of bank credit, other forms of corporate financing gained in importance, but could not compensate for poor loan growth (Graph III.2.10). In 2015, funding for firms increased by 2%, up from 1% in the previous three years. Nevertheless, this is still far below the annual increase of 6% observed in 2007. The larger contribution came from owners' equity financing, self-financing, trade finance and intercompany loans. With its project to establish a Capital Markets Union the Commission tries to foster a further development of non-bank finance.

3. TRADE-OFFS BETWEEN STABILISATION AND GROWTH

A stable financial sector is necessary to ensure sustainable growth, but is this consistent with attaining the highest possible output level? Financial deepening and credit expansion have traditionally been considered in the literature as important contributors to higher growth rates. However, a change of heart seems to have occurred since the beginning of the "Great recession" in 2007. More and more empirical studies refocus on the negative effects of high credit growth as a key driver of both financial crises and regular business recessions, with a negative impact on long-term growth. Rapid financial deepening and excessive levels of private debt start to be recognized as serious macro-economic risks, including for developed economies. It is interesting to note that these conclusions supported by quantitative research are very much in line with the findings of the traditional monetary theory of the business cycle([1]), thus reinforcing each other.

At the same time, before the introduction of the Basel III reforms, several analysts – in particular from the financial industry - had argued that strengthening the banking sector prudential indicators could delay the recovery from the current recession with significant negative consequences for economic growth, particularly in the short-term. This view was challenged by the quantitative analysis performed by central bankers, showing a more modest impact on growth. Moreover, the financial sector programmes implemented in Europe during the crisis not only helped vulnerable countries recapitalise their banks, but also deal with legacy assets, as a prerequisite for the resumption of lending to viable borrowers and return to sustainable growth. This chapter analyses the potential trade-off between banking sector stabilisation, balance-sheet clean-up and growth.

3.1. A STABLE BANKING SECTOR FOSTERS LONG-TERM SUSTAINABLE GROWTH

Until the crisis, there seemed to be an unchallenged consensus that financial deepening, i.e. a larger financial sector relative to GDP, was beneficial for growth. If there were any doubts about the role of credit growth on macro-economic stability, they were mainly confined to emerging markets (see, for example, Kaminsky and Reinhart 1999). This intellectual framework together with the financial sector deregulation that started in the 1980s underpinned a dramatic increase in the size of the financial sector in the world's advanced economies. Banks almost doubled in size relative to GDP, as measured by their lending activity, and almost tripled, according to the size of their balance-sheets since the 1980s until the peak of the crisis (Taylor 2012). This process was accompanied by an important increase in leverage, both in monetary and financial terms: (i) the increase in banks' balance-sheet decoupled from broad money, as the fast increase in assets was financed to a large extent by wholesale and inter-bank funding([2]) (Taylor 2012), and (ii) the banks' capital buffers relative to their assets became thinner and thinner([3]) (Haldane 2009 and 2011). This leverage resulted in both higher returns and risk-taking for banks([4]). Today, many analysts regard this evolution as the main contributor to the recurrent financial crises plaguing mainly emerging countries in the last two decades. It all culminated with the current global financial and economic crisis, when the paradigm of financial deepening as a prerequisite for growth started to be seriously questioned. The main arguments run as follows:

First of all, Taylor (2012) finds a counterfactual example to the alleged dependency of growth to financial deepening. Advanced economies managed to intermediate sufficient volumes of savings that underpinned high growth rates for about three decades after World War 2, with small and repressed financial sectors, while avoiding the current financial sector instability.

([1]) The theory was primarily developed by Ludwig von Mises and subsequently improved by other economists, such as the Nobel Prize winner Friedrich von Hayek.

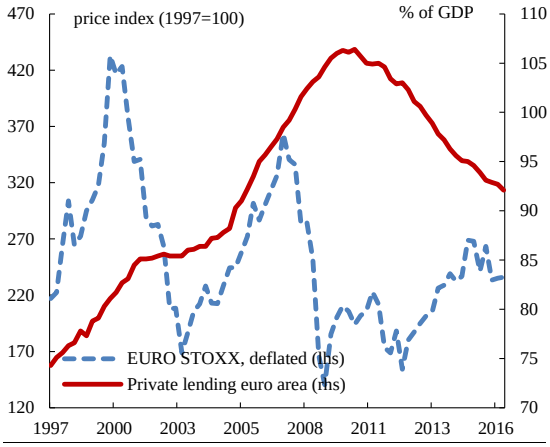
([2]) The increased monetary leverage measured as bank assets or loans relative to stable funding or deposits weakened banks' liquidity ratios and their capacity to refinance in case of a liquidity squeeze.

([3]) In the United Kingdom e.g., according to Haldane, since the turn of the 20th century, the (non-risk-weighted) bank capital decreased by about five times to around 3% at its low-water mark.

([4]) In the United Kingdom e.g., Haldane estimates that the return on banks' equity more than doubled from below 10% on average between 1920 and 1970 to over 20% since the 1970s and was even close to 30% at the height of the boom.

Several recent quantitative analyses identify excessive (private) credit growth – in nominal terms or as a share of GDP - as the number one predictor for financial crises (Jorda, Schularick and Taylor 2012, Drehmann and Juselius 2013, Alessi and Detken 2009, Borio and Lowe 2002([1]). As showed by Borio and Lowe, in combination with other indicators, such as asset prices, the prediction power of credit can increase even further (Graph III.3.1 for a simple illustration of the built-up of the asset bubble in parallel with credit growth). Moreover, rapid credit growth is not only a major contributor to financial crisis, but also plays an important role in shaping any business cycle, i.e. the intensity of recessions and output volatility (Jorda et al 2012). This calls for a redesign of the monetary and financial regimes as the previous single focus on credible inflation targeting seems discredited as a policy framework that can ensure macroeconomic stability.

Graph III.3.1: **Lending developments and asset bubbles**



Source: Bank of International Settlements, Datastream

Above a certain level of credit to GDP (estimated at about 90% of GDP by Cecchetti and Kharroubi 2012, see graph III.3.1), financial deepening, is likely to become a drag on economic growth. Although a more developed financial system is supposed to reduce transaction costs and enhance the allocation of capital and risk across the economy, it also competes for resources with the rest of the economy and in particular for highly skilled workers. In a similar type of analysis, Aizenman et al (2013), show that the higher the growth rate of value added by the financial sector relative to the other sectors of the economy, the greater the likelihood of a subsequent financial contraction.

If credit and financial expansion are among the best explanatory variables for financial crises, then what is the impact of the latter on long-term or trend growth? Recent empirical research is less equivocal in this respect. Recessions combined with financial crises are much more costly than normal recessions in terms of lost output (Taylor 2012, Jorda et al 2012, Drehman et al 2012, etc.) Moreover, the loss of output in systemic banking crises seems to have long-term consequences, as economic contractions are not followed by offsetting fast recoveries. Thus, on average, trend output lost in the crises is not regained afterwards (Cerra and Saxena 2005, Cecchetti et al 2009). These recent findings complement more mixed findings by previous empirical literature on whether financial crises affect output in the long-term.

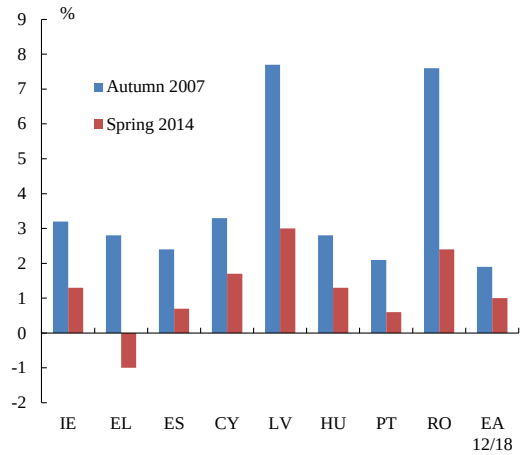
The likely reasons why financial crises are generally associated with permanent output losses are summarised by Bech et al (2012): (i) misallocation of capital during the boom phase, which cannot be fully reconverted in the recovery; (ii) the depressing growth effect of the subsequent debt burden; and (iii) disruptions to financial intermediation and investment in the recovery.

We can illustrate the loss of output that occurs during a financial crisis with data about mid-term potential real GDP, as calculated by the Commission Services for their regular forecasts. Graph III.3.2 shows how the growth rate of potential real GDP in the euro area has almost halved during the crisis. Nevertheless, the decline has been much more pronounced in programme countries, where potential growth has more than halved in all programme countries, the worst affected being Latvia, Romania, Greece, Spain and Portugal. This is not surprising, given the fact that the misallocation of resources in the boom years has been more pronounced in the programme countries and consequently both the pre-crisis potential output was overestimated and the

([1]) It is interesting to note that, by focusing on the importance of asset price developments, Borio and Lowe stressed that financial imbalances can even build up in periods of disinflation or low inflation. They also identified an on-going strong upswing, in particular in equity markets. This could have represented a useful warning signal for decision-makers back in 2002.

necessary medium-term adjustment of economic activity proved to be more onerous.

Graph III.3.2: **Annual growth rate of medium-term potential real GDP (after 5 years)**



Source: European Commission

There is a high likelihood of financial sector crises, followed by deep and costly recessions, if credit and money creation has been excessive. According to the Monetary Theory of the Business Cycle, systematic business errors occur when commercial banks unexpectedly increase the quantity of credit and push interest rates below the level consistent with sustainable inter-temporal preferences. As a result, interest rates do not reflect time preference and real savings in the economy anymore and entice businesses to overinvest in long-term and capital-intensive projects. If entrepreneurs fail to recognize this, a misallocation of factors of production is likely to result in the boom. As more long-term investments are embarked upon while the demand for consumer goods has not concomitantly decreased, there are not enough real savings in the economy to ensure the finalization of all projects financed by credit expansion. Mal-investments are liquidated and the structure of production is brought in line with consumer preferences with considerable welfare costs and social pain in an economic recession which is bound to follow.

In conclusion, both empirical and theoretical research concur that financial sector stability is key to ensure long-term sustainable growth and avoid damaging cyclical volatility. In the crisis, the successful restoration of banking sector stability in Europe via financial sector programmes and other policies at European and national level will contribute therefore to maximizing Europe's long-term growth potential. However, it remains to be investigated in this chapter whether these stabilisation measures are equally growth supportive in the short-run, i.e. whether they are not slowing down the recovery from the crisis.

3.2. A TRADE-OFF BETWEEN FINANCIAL STABILISATION AND GROWTH?

Despite emerging consensus that financial stability benefits long-term economic growth, there were analysts emphasising the potential costs to growth, in particular in the short term, from the banking sector stabilisation. Two main transmission channels were envisaged: (i) the introduction of the new more demanding Basel III prudential rules, that could restrict lending, and (ii) the restructuring of the banking sector which often implies a shrinkage of the balance sheet, deleveraging and likely disruptions in the traditional relationships with SMEs if the banks are requested to divest branches and reduce their presence in certain market segments.

The banking industry claimed that the negative impact of Basel III reforms on growth would be significant and would be particularly felt in the short-term (International Institute of Finance, 2011). The cumulated loss of output was estimated at around 3.2% lower level of real GDP within five years, via two main transmission channels. First, the higher capital and liquidity needs were assumed to translate into higher costs for banks to raise capital or debt. In turn, this would prompt bank managers to pass most of these higher (marginal) funding costs to the borrowers in the form of higher lending rates. Second, banks were likely to respond to higher capital and liquidity requirements by trimming risky assets and lending. Under both scenarios, the volume of lending in the economy would be affected and growth restricted below its natural path. However, the International Institute of Finance conceded that if equity investors and bank creditors perceived the reforms as enhancing bank stability, then the negative growth implications of the Basel III reforms could be modest.

Bank supervisors – the Financial Stability Board and the Basel Committee on Banking Supervision – have produced their own estimates regarding the impact on growth of strengthening bank prudential regulations by establishing a "Macroeconomic Assessment Group". The report revealed a more modest loss of output in the short-term, peaking at about 0.22% of GDP below baseline forecasts, followed by a recovery of GDP towards the baseline level after 35 quarters (Bank for International Settlements, 2010a). Unlike the International Institute of Finance report which quantified the impact of the entire Basel III package, this report, based on the unweighted median estimate across 97 simulations, focused only on the transitional costs of stronger capital requirements and may as such underestimate the impact.

The long-term benefits of a stable banking system in terms of reduced risk and cost of financial crises were analysed separately by the Basel Committee on Banking Supervision (Bank for International Settlements, 2010b). The report shows a range of estimates for the annual net benefits from reducing the probability of crises via tighter capital and liquidity requirements. The net benefits are measured in terms of the long-run change in the yearly level of output from its pre-reform path. Thus, economic benefits are calculated via the reduced probability of banking crises (no estimate of the reduced severity of crisis is made) and economic costs are estimated by mapping changes in regulatory requirements into higher lending spreads (it is assumed that banks' additional costs are fully passed on to borrowers, maintaining pre-reform levels of return on equity, costs of liabilities and operating expenses). The core results show that long-term net benefits remain positive for a broad range of capital ratios (tangible common equity over risk-weighted assets from 8% to about 15%), despite the conservative assumptions made.

In addition, work by the European Commission accompanying the legislative proposal of a Capital Requirements Directive and Regulation in 2011 also concluded that the macro-economic costs of the transition to stronger liquidity and capital requirements would have only a limited impact on the aggregate output (European Commission, 2011a). As regards SME financing, the assessment of the European Commission found that small and medium-sized enterprises, which are rather dependent on bank credit, are expected to be the primary beneficiaries of the enhanced countercyclical properties of the EU bank capital regulation. Moreover, when the European Commission introduced a new package of proposals to further strengthen the resilience of EU banks in 2016, special attention was given to the financing of small and medium-sized enterprises. The impact assessment (European Commission, 2016a) released on the occasion of the introduction of the changes to the prudential requirements of banks emphasized that the proposed recalibration of the capital requirements for bank exposures to small and medium-sized enterprises, the improved resilience of banks to future crises and the reduction of compliance costs for credit institutions, in particular the smaller and less complex ones, are expected to have a positive effect on bank financing of small and medium-sized enterprises.

The banking sector reform in Europe went beyond the strengthening of bank regulatory ratios and implied also a cleaning-up of the banks' balance-sheets, in particular for countries engaged in financial assistance programmes. The latter were asked to boost up provisions by recognizing balance-sheet losses and manage their legacy assets either internally or via their transfer to independent bad banks, such as NAMA in Ireland or SAREB in Spain. The ECB and EBA's stress tests which are conducted on a regular basis are extending this process to all European banks. Repairing bank balance sheets and restoring capital positions are a prerequisite for the resumption of a sound flow of new lending in the economy (Darvas 2013, Cohen 2013, Caballero et al 2008).

Quite often the example of Japan's "lost decade(s)" is associated with the failure of curtailing credit flowing to otherwise insolvent borrowers via sham loan restructurings. This prevented Schumpeter's process of "creative destruction" that would free up resources for the expansion of the viable part of the economy. The ECB's comprehensive analysis supports the recovery by encouraging creative destruction in the banking sector (speech by the

President of the ECB Draghi at the presentation ceremony of the Schumpeter Award([1]).

3.3. MITIGATING THE COST OF DELEVERAGING

When a financial bubble bursts, stabilising the economy is a painful exercise accompanied by recession and deleveraging of the banking sector if confidence is lost. The question is whether this adjustment process can be made more bearable.

The sacrifice ratio (Box III.3.1) is a metric that has been often used to quantify the trade-off between disinflation and output loss and the same technique can be applied to analyse the trade-off between stabilisation of the banking sector (measured by the repayment of central bank funding) and deleveraging (measured by the reduction in the balance sheet). It appears that the size of the banking sector and the level of government debt increase the sacrifice ratio, because of the contingent liabilities that the former represents for the latter. Consolidation of public finances facilitates bank stabilisation through the favourable effect a credible sovereign has on market funding for the banks. Similarly, sounder banks regain quicker the confidence of depositors, which allows to repay the Eurosystem borrowing without excessive deleveraging. Finally, the impact of the adjustment pace is not clear cut with some countries benefiting from frontloading the deleveraging (prompting a quick adjustment of expectations and return of confidence), while other from spreading it (to smoothen the impact of the balance sheet reduction).

3.4. STABILISATION, THE COST OF BANKING AND THE RECOVERY

During the debate about strengthening the stability of the financial sector and avoiding a repeat of the global financial crisis it has been argued that banking sector stabilisation may impact negatively the recovery from the crisis, as it would act pro-cyclically. The size of such a potential pro-cyclical effect of the Basel III reform depends significantly on whether the stabilisation measures result in increased investor confidence that could off-set an increase in the cost of capital and funding for banks in the short-run.

As more than five years have passed since the publication of the impact estimates of the banking industry and supervisors, one can have a cursory look at what happened with the cost of funding and capital for European banks in the meantime. The implementation of CRD IV was not the only factor impacting investor confidence in banks. An additional impact on banks' capital and funding cost may come from the Bank Recovery and Resolution Directive which makes compulsory bailing-in up to senior unsecured creditors, if needed. Furthermore, the ECB monetary policy announcements and its quantitative easing stance, together with the economic recovery have all boosted investor confidence and reduced funding and capital costs.

The compliance with the Basel III (CRD IV) requirements was frontloaded to a large extent. Since the beginning of the crisis, euro-area banks have raised EUR 225 billion of new capital from private sources, while government injections amounted to EUR 275 billion over the period (ECB, 2013). This has led to an improvement of the core tier1 ratio from 10% to 11.7% between December 2011 and June 2013 for the 64 most significant EU banks surveyed by the European Bank Authority. This was due to both an increase in capital by 7.3% and a decrease of risk-weighted assets by 8.4%. As regards non-core capital (i.e. subordinated debt), annual issuance declined sharply since 2008, but stabilised over 2011-2013.

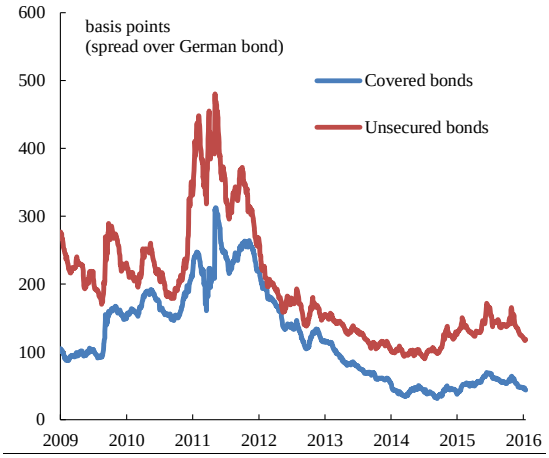
The latest EU-wide stress test conducted by the European Bank Authority and Single Supervisory Mechanism in 2016([2]) showed a further improvement of the capital position of the banks since the exercise conducted in 2014. The 51 banks in the stress test sample increased their capital position by about EUR 180 billion between December 2013 and December 2015 and by more than EUR 260 billion since December 2010. Thus the starting weighted average common equity tier1 capital ratio in the sample as of December 2015 was 13.2%. It was significantly higher than the

([1]) Central Bank of the Republic of Austria, Vienna, 13 March 2014: http://www.bis.org/review/r140314a.htm

([2]) See the results of the stress test at: https://www.eba.europa.eu/risk-analysis-and-data/eu-wide-stress-testing/2016

equivalent starting value of common equity tier1 for the first stress test carried out by the European Bank Authority in 2011, i.e. 8.9% and 11.1% level recorded at end- 2013 which served as starting point for the 2014 exercise.

Graph III.3.3: **Spreads of bank covered and unsecured bonds**

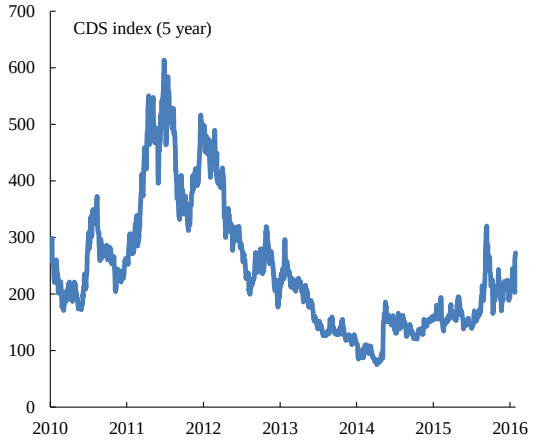


Source: Markit iBoxx

The strong issuance of bank equity in the markets since 2010 took place at gradually improving prices, as proven by the strong recovery of bank stock prices since mid-2011, despite some inherent volatility (see chapter III.1 on bank stabilisation). A notable deterioration in market sentiment took place at the beginning of 2016 when rising risk aversion impacted negatively euro area banks' share prices. Euro area bank shares have recovered some of the losses since, but they were still trailing their UK and US peers. More market pressure came after the announcement of the results of Brexit referendum.

In parallel, the cost of issuing debt gradually improved since 2010, with a significant decline taking place starting with the second half of 2012. The cost for the banks of issuing both covered and unsecured bonds decreased considerably (Graph III.3.3). Since the peak recorded in 2011, bond spreads declined significantly by about 350 basis points for the unsecured bonds and by around 250 basis points for the covered ones. A pick-up in the yields can be noted over the last twelve months, but this is not changing the longer-term evolution. Also the issuance of subordinated debt became cheaper as illustrated by the decline of the index for 5-year European subordinated debt starting from 2010, which accelerated since mid-2012 (Graph III.3.4). The recent pick-up of this risk measure of banks' debt reflects the worsening of banks' profitability prospects in a low growth and interest rate environment, but also the entry into force of the bail-in requirements of Bank Recovery and Resolution Directive.

Graph III.3.4: **CDS index of bank subordinated debt**



Source: Bloomberg, ITraxx SUBFIN CDS index

Another issue related to the procyclicality of financial sector stabilisation refers to the possibility of having a creditless recovery. First, one should clarify what "creditless" means, because indeed, a decline in the stock of credit can still be compatible with new lending flows growing at acceptable rates, in particular if a credit boom took place previously and legacy assets are being provisioned or written-off on banks' balance sheets. As a matter of fact, this would be the preferred option in countries where deleveraging should take place. Second, historical evidence shows that a recovery without credit is possible as on average recessions end two quarters before the credit crunch ends (Claessens et al, 2009). At the same time, if the availability of credit is limited, the recovery will be driven by consumption, which eventually leads to a shallower recovery as investment will not follow suit.

Box III.3.1: **The sacrifice ratio, a measure of the cost of stabilisation in terms of deleveraging**

The sacrifice ratio is a metric that has been often used to quantify the trade-off between disinflation and output loss and in this context the impact has been assessed of factors like price and wage rigidity, the credibility of monetary policy, the speed of adjustment or the openness of the economy (e.g. Ball 1994, Chortareas et al. 2002, De Roux and Hofstetter 2012). The same method has been applied to deficit reduction and unemployment (Hishow 2011) to gauge the consequences of a public debt brake eventually constitutionally enshrined as requested by some Member States.

When a financial bubble bursts, stabilising the economy is a painful exercise accompanied by recession and deleveraging of the banking sector if confidence is lost. It seems an inevitable process after every period of overheating and excessive expansion of the financial system. In some countries (see Graph) banks' balance sheets have doubled in 2009/10 in little over half a decade after which a correction took place.

Several techniques have been pursued to estimate the sacrifice ratio including sophisticated regression analysis, but the ratio has also been calculated as a simple division which is the approach that will be the followed here. First, a measure has to be found for financial stabilisation in the denominator. While many indicators can be thought of, the repayment of the central bank borrowing is the statistic selected as this variable is easily available. It is to represent the return to normal funding conditions after access to the wholesale market dried up at the height of the financial crisis and was replaced by significant central bank borrowing. The stabilisation period ends when central bank borrowing has reached a low and can be of variable length. Second, sacrifice in the numerator has to be defined. For this, the reduction in the banks' balance sheet has been selected. Formulating the trade-off in this way is based on the need for some reduction in the banks' balance sheet, if the lack of confidence prevents funding on the market. Thus, the sacrifice ratio can be interpreted as the amount of balance sheet reduction in billion EUR that has to be accepted to reimburse EUR 1 billion to the central bank. A ratio below one means that at least part of the central bank borrowing could be replaced by deposits or market funding and a negative ratio indicates that the balance sheet could expand during the period of the repayment of the central bank implying no sacrifice in this context because confidence in the banking sector was returning permitting to attract deposits or market funding in excess of the returned borrowing from the central bank.

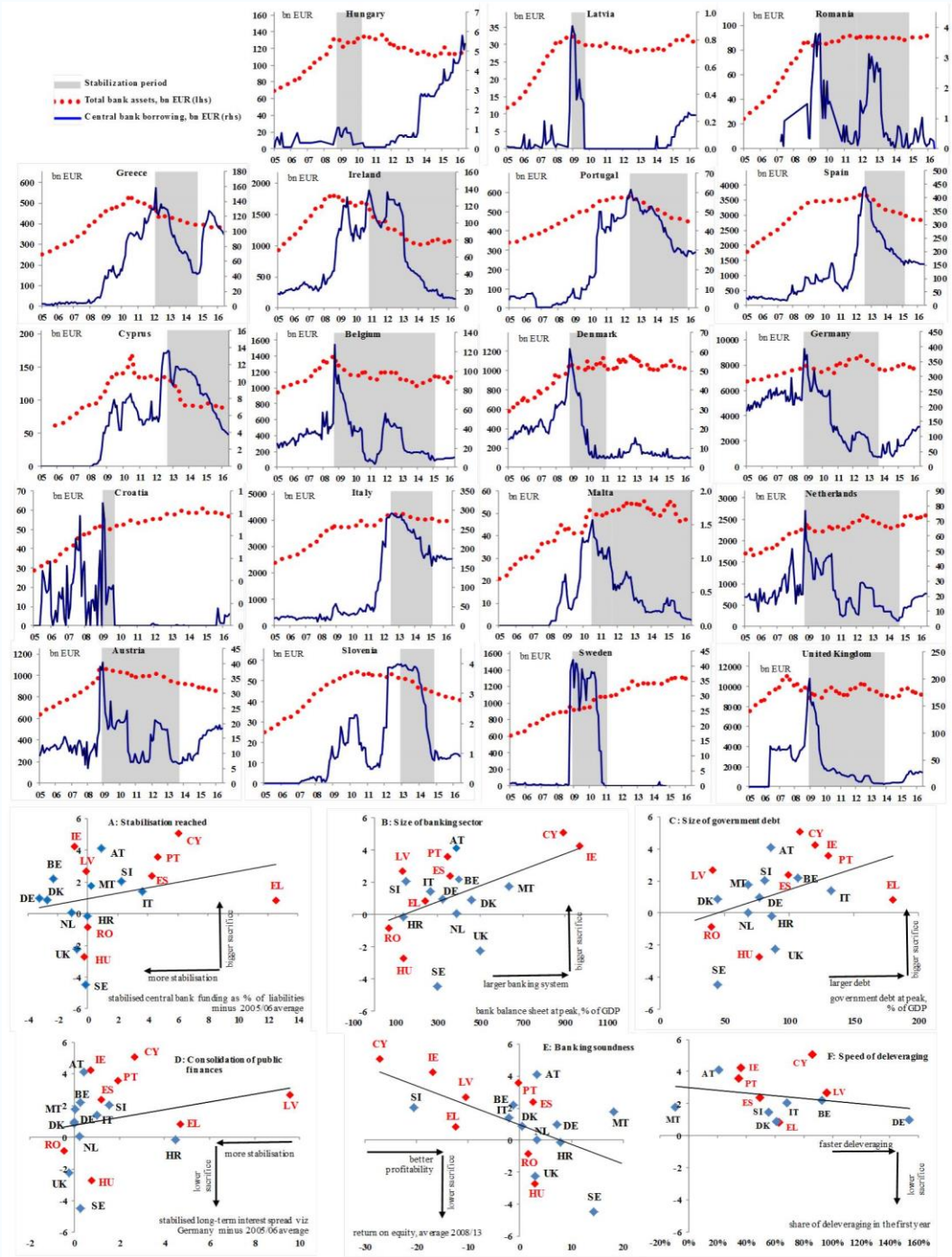
The focus is on the eight programme Member States and the elven countries that received a Country-specific recommendation in the financial domain. Bulgaria is not included because of its currency board arrangement which prevents the banks borrowing from the central Bank. The sacrifice ratio varies from 5.1 in Cyprus to -4.5 in Sweden (Panel A: Stabilisation reached), but these numbers have to be interpreted with care as not the same level of stabilisation has been reached. In Hungary, only the first spike in central bank borrowing and its reduction in 2008-2010 has been considered. It was accompanied by an expanding balance sheet, partially thanks to the Vienna Initiative which encouraged foreign parent banks to maintain exposure to their subsidiaries. Greece has a sacrifice ratio of only 0.8, but its central bank borrowing is still high. Ireland at 4.2 appears to have paid a relatively large deleveraging price, but together with Austria moved further ahead in returning to more normal levels of borrowing from the central bank and the stabilisation of the banking system.

Besides the degree of stabilisation reached, there is some evidence that the price of stabilisation increases with the size of the banking sector and the level of government debt, while consolidation of public finances reduces the sacrifices to be made as well as sounder banks and a faster pace of deleveraging. The high stabilisation cost in Ireland and Cyprus appears to be in particular

(Continued on the next page)

Box (continued)

Graph 1: **Trade-off between deleveraging and stabilisation**



(1) Sacrifice ratio = banks balance sheet reduction divided by central bank funding reduction. The balance sheet reduction is calculated from peak to trough in central bank borrowing.
Source: European Commission

(Continued on the next page)

Box (continued)

explained by the large banking sector (Panel B: Size of the banking sector). In Italy and Greece, government debt (Panel C: Size of government debt) of which a large part is held by the banks is a main driver of the sacrifice ratio which remained after all contained in both countries, also because of the moderate size of the banking system.

The influence of public finances is further highlighted by the lowering impact a decline in government interest rates has on the sacrifice ratio, presumably via the link of cheaper funding costs for the banks for which government yields could stand as a proxy (D: Consolidation of public finances). Of the programme countries, Romania, Ireland and Hungary succeeded in reducing the most government interest rate spreads. Greece failed to consolidate public finances and interest rate spreads remained high weighing on the stabilisation of the banking system. Latvia is an outlier in this context as during the short stabilisation period of 2009 interest rate spreads increased sharply to reverse only afterwards. Also financial strength of banks as reflected in their profitability (Panel E: Banking soundness) softens the trade-off through confidence effects of which Sweden, Malta, United Kingdom but also Hungary, Romania and Croatia seem to have benefited.

Finally, frontloading the balance sheet adjustment appears to have eased the stabilisation pain in some countries (Germany, Latvia, Greece and Belgium), while spreading the adjustment in other (Austria, Ireland), increased the sacrifice ratio (Panel E: Speed of deleveraging). However, the impact of the adjustment pace is not clearcut with Malta combining a low sacrifice ratio and slow balance sheet reduction and in the same vein Cyprus is characterised by a speedy adjustment and a relatively high stabilisation cost. The time dimension is also important. In the case of Ireland e.g., the deleveraging which took place before central bank borrowing reached its peak and pointing at some frontloading, is not taken into account in the measurement. By contrast, the progress made with stabilisation in Greece between 2012 and mid-2014 was completely reversed. This uncertainty of the role played by the deleveraging speed mirrors the debate on the pace of disinflation in order to minimise output loss with Sargent (1982) arguing that quick disinflation is cheaper thanks to a rapid adjustment of expectations against the opposite view that allowing time for prices and wages to adapt lowers the pain of disinflation.

3.5. CONCLUSION

Overall, stabilisation of the banking sector together with the implementation of the new Basel III capital and liquidity requirements will support growth in the long run.

Furthermore, short-term costs of banking stabilisation in terms of deleveraging of the balance sheet are mitigated with a smaller and healthier banking sector and consolidation of public finances, while the impact of the pace of deleveraging is not clear cut, with some countries benefiting from frontloading and other from a spread adjustment. The increase in investor confidence helped lowering the cost of bank funding with a positive impact on the reduction of lending rates to both households and fims. These findings do not point to a meaningful negative impact on economic growth in the short-run stemming from increased regulatory requirements for capital and liquidity.

Finally, it is not clear whether in the absence of reform the additional growth dividend that could have been reaped would have been sustainable going forward. Indeed, potential output in programme countries recorded a sharper decline during the crisis relative to the EU average. This confirms that an unbalanced growth pattern greatly damages the growth potential in the medium-term, which can only be restored with painful economic adjustment and structural reforms.

GLOSSARY AND REFERENCES

Glossary

Asset management company (AMC): generally speaking, an asset management company is a company that invests its clients' pooled funds into securities that match declared financial objectives. In the specific context of NPL and bank restructuring, an AMC more narrowly refers to a company receiving NPL from banks that cannot deal with impaired assets on their own and/or wish to quickly remove them from their balance sheets. The term "bad bank" is often used as a synonym for AMC, although the vast majority of AMC are not banks (i.e. they do not have a banking license).

Asset protection scheme (APS): a scheme in which the portfolio of impaired assets remains on the balance sheet of the bank, but losses on the portfolio are guaranteed by the state beyond a first tranche of losses fully borne by the beneficiary bank. The state commits to cover the losses that exceed a first tranche either fully or partially, and typically up to a certain level.

Asset quality review (AQR): a review of (samples of) selected bank asset portfolios aimed at enhancing the transparency of bank exposures, including the adequacy of asset and collateral valuation and related provisions. AQRs are often conducted by independent consultants as a preparatory step before banking stress tests.

Bad bank: see Asset Management Company.

Bail-in: rescuing a financial institution on the brink of failure by making its creditors and/or depositors take a loss on their holdings.

Bail-out: rescuing a financial institution on the brink of failure by external parties, typically governments using taxpayers' money.

Basel III: "Basel III" is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, to strengthen the regulation, supervision and risk management of the banking sector. These measures aim to improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source; improve risk management and governance; strengthen banks' transparency and disclosures.

Book value: see net value.

Collateral: property or other asset that a borrower offers as a way for a lender to secure the loan.

Common equity tier 1 capital (CET1 capital): the most reliable capital of a bank as introduced by BaselIII/CRDIV package. CET1 items are capital instruments that fulfil strict criteria set by the CRR. Supervisors also need to deduct certain items form this capital like DTAs, minority interest in banking subsidiaries when calculating supervisory own funds.

Contingent convertibles (CoCos): bonds similar to traditional convertible bonds in that there is a strike price, which is the cost of the stock when the bond converts into stock. What differs is that there is another threshold in addition to the strike price, which triggers the conversion when certain capital conditions are met, e.g. the bank capital adequacy falls below a predefined level. Issuing contingent bonds is more advantageous to companies than issuing regular convertibles.

CRD IV package: the Basel III agreement was transposed via a Regulation (CRR) and a Directive (CRD) into EU law in 2013. The rules apply from 1 January 2014 and tackle some of the vulnerabilities shown by the banking institutions during the crisis. The package added new rules on e.g.: governance, remuneration, systemic buffers on top of Basel III rules.

Credit default swap (**CDS**): a financial contract where the seller of the CDS compensates the buyer in the event of a default of the reference loan in the contract.

Deferred tax asset (DTA): an asset on a company's balance sheet that may be used to reduce taxable income. It is the opposite of a deferred tax liability, which describes something that will increase income tax. Both are found on the balance sheet under current assets. Deferred tax assets are created due to taxes paid or carried forward but not yet recognized in the income statement. Its value is calculated by taking into

account financial reporting standards for book income and the jurisdictional tax authority's rules for taxable income. For example, deferred tax assets can be created due to the tax authority recognizing revenue or expenses at different times than that of an accounting standard. This asset helps reduce the company's future tax liability. It is important to note that a deferred tax asset will only be recognized when the difference between the loss-value or depreciation of the asset is expected to offset future profit.

Eligible asset: asset accepted as collateral by the Eurosystem. Typically, collateral refers to marketable financial securities, such as bonds, or other types of assets, such as non-marketable assets or cash.

Expected losses: as opposed to incurred losses, expected losses are recognised before they are incurred. Expected losses are based on probability-weighted possible outcomes of maximum estimated losses in a time specific horizon and based on historical exposures.

Exposure at default (EAD): a parameter used in the calculation of regulatory capital under Basel II (and Basel III) for a banking institution. It can be defined as the gross exposure upon default.

Forborne exposure (EBA definition): forborne exposures are modified debt contracts (their terms, conditions, refinancing) of debtors, which would not have been granted had the debtor not been in financial difficulties.

Going concern: Currently operating business that is expected to continue to function as such and remain viable in the foreseeable future.

Gone concern: Defunct firm or one in the process of being wound up. Debts of such firms become due immediately in full, their market value is determined on the basis of auction or liquidation value of their tangible assets, and their goodwill counts for nothing.

Gross value (or nominal value) of a loan: the gross value of a loan corresponds to the outstanding amount due by the borrower to the bank.

Hybrid capital instruments: this type of capital has both debt and equity features. These instruments are generally either long dated or perpetual and have pre-defined deferral mechanisms to suspend interest payments. This covers a variety of instruments, such as preference shares, convertible bonds, etc.

Impaired loan: a loan is impaired when it is not likely the lender will collect the full value of the loan because the creditworthiness of a borrower has fallen.

Incurred losses: as opposed to expected losses, an incurred loss model assumes that all loans will be repaid until evidence to the contrary (known as a loss or trigger event) is identified. Only at that point is the impaired loan written down to a lower value.

International financial reporting standards (IFRS): a single set of accounting standards, developed and maintained by the International Accounting Standards Board (IASB) with the intention of being applied on a globally consistent basis thus providing investors and other users with the ability to compare the financial performance of publicly listed companies across borders. IFRS were formerly known as International Accounting Standards (IAS).

Loss given default (LGD): the proportion of Exposure At Default (EAD) that will be lost if default occurs. It is derived by taking account of any collateral or security that applies to the transaction/facility and the degree of subordination in insolvency ranking of a facility. The LGD on a debt is impacted by characteristics of the debt, characteristics of the issuer of the debt, the firm's industry and the geographic region, and the stage of the credit cycle.

Market value (of a loan): the value at which a loan can be sold to a third party in an arm's length transaction.

Moral hazard: occurs when one person takes more risks because someone else bears the cost of those risks.

Net present value: expectation of the sum of present and future discounted cash-flows.

Net value (or book value) of a loan: the net value of a loan is equal to the difference between the gross value and the impairments made on this loan. Loans are recorded at their net value in the balance sheet statement.

Nominal value: see gross value.

Non-performing exposure (NPE) (EBA definition): non-performing exposures are those that satisfy either or both of the following criteria: (a) material exposures which are more than 90 days past due; (b) the debtor is assessed as unlikely to pay its credit obligations in full without realisation of collateral, regardless of the existence of any past-due amount or of the number of days past due.

Non-performing loan (NPL): non-performing loans are typically exposures with more than 90 days past due. All exposures to a debtor are non-performing when on-balance sheet exposures more than 90 days past-due are larger than 20% of the on-balance sheet exposures to the debtor. A broader definition of NPL can also include exposures that are likely to default, even if they have less than 90 days past due. The definition of NPL can greatly vary from one country/organisation to another. The EBA has tried to harmonize the NPL definition across Member States.

Probability of default (PD): the likelihood that a loan will not be repaid by its due date and falls into default. A PD is calculated for each counterparty and each exposure. The credit history of the counterparty and nature of the investment are all taken into account to calculate the PD figures.

Provision: a loan loss provision is an expense set aside as an allowance for bad loans. It is a synonym of impairment.

Resolution: occurs at the point when the authorities determine that a bank is failing or likely to fail, that there is no other private sector intervention that can restore the institution back to viability within a short timeframe and that normal insolvency proceedings would cause financial instability. Resolution means the restructuring of a bank by a resolution authority, through the use of resolution tools, to ensure the continuity of its critical functions, preservation of financial stability and restoration of the viability of all or part of that institution, while the remaining parts are put into normal insolvency proceedings.

Restructuring plan: one of the conditions imposed by the Commission to approve State aid. The restructuring plan aims at (1) restoring long-term viability without further need for State support in the future, by restoring sustainable profitability and reducing risk; (2) minimising the use of taxpayers' money, through appropriate burden-sharing measures, including aid remuneration and contributions by the bank, shareholders and junior creditors; (3) limiting distortions of competition through proportionate remedies. Its implementation is monitored through a monitoring trustee.

Risk-weighted asset (RWA): a bank's assets, weighted in relation to their relative credit risk. Different types of assets carry different type of risk, therefore weightings vary. The Basel regulations provide precise guidance as to which weighting applies to which asset.

Systemically important financial institution (SIFI): a financial institution regarded as so important to the economy that its failure could lead to a widespread economic crisis.

Small and medium-sized enterprise (SME): an enterprise that employs fewer than 250 persons and has an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.

State ownership: also called public ownership and government ownership, it refers to property interests that are vested in the state or a public body representing a community as opposed to an individual or private party. State ownership can be direct, or indirect, via other state-owned enterprises. The controlling power can be "de jure" if the state ownership is higher than 50% but also "de facto" if the stake is lower than 50% but is sufficient to obtain a systematic majority in the general assembly in practice.

Stress testing: stress testing is a risk management technique used to evaluate the potential effects on a bank's financial condition of a specific event and/or movement in a set of financial variables.

The traditional focus of stress testing relates to exceptional but plausible events.

Subordinated debt: subordinated debt ranks lower than ordinary depositors and other (senior) bonds of the bank. Only those with a minimum original term to maturity of five years can be included in the calculation of this form of capital.

Tier 1 capital: consists of the sum of the Common Equity Tier 1 capital and Additional Tier 1 capital of the institution. Additional Tier 1 instruments rank below Tier 2 instruments in the event of and have less strict criteria by the CRR as CET1 in terms of e.g. issuance, dividend payments, redemption etc.

Tier 2 capital: the second most reliable form of capital from a regulatory point of view. It is divided into two tiers. The upper tier includes undisclosed reserves, revaluations reserves, and undated subordinated debt. The lower tier includes hybrid instruments and subordinated debt.

Tier 3 capital: includes short term subordinated debt and undisclosed reserves and general loss reserves. It is used to cover market risk, commodity risk and foreign risk exposure. It used to be included in the minimum capital requirements under Basel II. It was removed from the capital adequacy ratio definition under Basel III.

Transfer value of a loan: the value at which a loan is transferred from a bank to an asset management company. Typically, in a situation where the transfer implies some State aid, the following relations hold: gross value > net value > transfer value > market value, but < real economic value (the underlying economic value of the loan derived from a prudent estimation of the cash flows generated from this loan).

NPL work-out: refers to the active management of NPLs in order to recover as much value as possible.

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