

Bail-ins and Bank Resolution in Europe

A Progress Report

Thomas Philippon and Aude Salord

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Geneva Reports on the World Economy Special Report 4

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List of abbreviations

AMC	asset management company	SPE	single point of entry
BHC	bank holding company	SPVs	special purpose vehicles
BRRD	Bank Recovery and Resolution Directive	SRB	Single Resolution Board
CRD	Capital Requirements Directive	SRF	Single Resolution Fund
CDS	credit default swap	SRM	Single Resolution Mechanism
DFA	Dodd-Frank Act	SSM	Single Supervisory Mechanism
DG COMP	Directorate-General for Competition, European Commission	SREP	Supervisory Review and Evaluation Process
EBA	European Banking Authority	FINMA	Swiss Financial Market Supervisory Authority
ECB	European Central Bank	SIFI	systemically important financial institution
EDIS	European Deposit Insurance Scheme	TARP	Troubled Asset Relief Program
ELA	emergency liquidity assistance	TLAC	total loss-absorbing capacity standard
EU	European Union	USC	United States Code
FDIC	Federal Deposit Insurance Corporation		
FRB	Board of Governors of the Federal Reserve System		
FROB	Spanish Fund for Orderly Bank Restructuring		
FSB	Financial Stability Board		
FSOC	Financial Stability Oversight Council		
G-SIB	global systemically important bank		
G-SIFI	global systemically important financial institution		
HRE	Hypo Real Estate		
ISDA	International Swaps and Derivatives Association, Inc.		
JST	Joint Supervisory Team		
LCR	liquidity coverage requirement		
MiFID II	Market in Financial Instruments Directive		
MoU	Memorandum of Understanding		
MPE	multiple point of entry		
MPS	Banca Monte dei Paschi di Siena		
MREL	minimum requirement for own funds and eligible liabilities		
NAMA	National Asset Management Agency (Ireland)		
NPL	non-performing loan		
NSFR	net stable funding ratio		
OFR	Office of Financial Research		
OLF	Orderly Liquidation Fund		
PONV	point of non-viability		
PSI	private sector involvement		

Executive summary

Failed financial firms should not be bailed out by the taxpayers. Unfortunately, Europe has a weak track record of following this principle of good governance and sound economic policy. In this Special Report in the *Geneva Reports on the World Economy* series, we review recent efforts to improve the situation and provide several policy recommendations.

We start by comparing the US and EU frameworks for dealing with troubled banks. In the United States, the Dodd-Frank Act is split between Title 1 (oversight of large financial institutions) and Title 2 (new resolution powers). The EU regime includes state aid rules and the Bank Recovery and Resolution Directive (BRRD). The main objective of the BRRD is to provide a framework whereby financial firms can be repaired or resolved without public money. It has become an important building block of the Banking Union. The US and EU frameworks have much in common, from their emphasis on financial stability to the conditions for opening the resolution proceedings and the resolution powers of the administrative authorities. There are also some significant differences, such as the lack of a restructuring option in the United States or the uncertainty surrounding the precautionary recapitalisation measure in the EU. A major issue in the EU is the fact that the BRRD has been phased in before the completion of other critical features of the Banking Union, such as a European deposit insurance scheme or the minimum requirement for own funds and eligible liabilities.

We then review the track record of Europe in matters of bank resolution. We find that European taxpayers have covered more than two-thirds of the cost of resolving and/or recapitalising distressed banks. The goal of the new framework (i.e. BRRD and state aid) is to increase effective private sector involvement, in particular via bail-ins. This would be a significant improvement. For instance, we find that if private investors had effectively contributed up to 8% of assets, this would have halved the taxpayer burden. Cyprus represents an example of a country where, for various reasons, investors bore the brunt of the resolution costs. In that respect, the macroeconomic performance of Cyprus since 2013 is encouraging, although high levels of non-performing loans remain a challenge. Finally, recent issues with Italian banks show that credibility of the bail-in option requires effective supervision of who is exposed to losses in case of bail-in.

The third part of our report focuses on policy recommendations. Although much improved relative to the pre-crisis period, we argue that excessive forbearance is still an issue and we recommend improvements in the governance of the Single Supervisory Mechanism, its coordination with the Single Resolution Board, and the design of stress tests, as well as the monitoring of exposures to bail-inable instruments. Europe also needs to address important cross-border issues in terms of resolution planning, liquidity and capital. Finally, we propose some changes to improve the predictability of resolution for financial contracts.

Overall, we are cautiously optimistic about the future of bail-in in Europe. The main issue is the transition from the old regime to the new one. For several years to come, the new resolution tools will have to be applied to balance sheets that are not quite ready for it. This is bound to create bitter legal and political fights. But the evidence suggest that bail-in can work – in fact, it is already producing significant changes in some dimensions – and with the help of hard-headed policymakers, it can become credible and effective.

Introduction

Between 2006 and 2008, several US financial institutions either failed or had to be rescued with public funds.¹ Most of the US Treasury's financial sector interventions were funded by the Troubled Asset Relief Program (TARP), which reached over 6% of GDP in the fourth quarter of 2008 alone. In Europe, all member states of the European Union, with the exception of Romania, provided support to their financial institutions (Petrovic and Tutsch, 2009). Between October 2008 and 31 December 2012, the European Commission approved €3.6 trillion of state aid measures to financial institutions, of which €1.6 trillion was effectively used. Member states thereby provided €591.9 billion (or 4.6% of EU GDP in 2012) of capital support (recapitalisation and asset relief measures) to the financial sector.²

The debate regarding the justification of the bailouts is unlikely to ever be settled because it is almost impossible to assess the systemic consequences that disorderly failures would have had on the financial system and the broad economy. What is clear, however, is that citizens around the world do not want to be presented with a 'too big to fail' dilemma again. The job of regulators is therefore to make the system safer, and to create a process whereby systemically important financial institutions (SIFIs) can fail in an orderly manner. To preserve public finance *ex post* and market discipline *ex ante*, the guiding principle of the post-crisis financial regulations is that no private financial institution should be viewed by markets as being too important to be allowed to fail.

With these goals in mind, we review the EU resolution framework and discuss the desirability and feasibility of bail-ins as opposed to bailouts. Banking resolution involves difficult trade-offs between creditors and taxpayers, between market discipline and financial stability, and between sovereign solvency and political risk. Allocating losses to private creditors improves incentives and protects taxpayers, but it can fall disproportionately on some investors and create short-term financial instability.

We believe that, in the long run, the systematic application of bail-in will reshape financial markets and lead to a more efficient equilibrium, where financial risks will be priced and allocated more effectively in capital markets.

There are, however, two fundamental issues. The first – and arguably most important – issue is the transition from the old regime to the new one. For several years to come, the new resolution tools will have to be applied to balance sheets that are not quite ready for it. This is bound to create bitter legal and political fights. The second issue is that the new regime must be credible and predictable. Investors must be able to understand the bail-in rules – in particular, the hierarchy of bail-inable instruments – so that they can effectively assess their risks.

This report consists of three parts. In Part 1, we review and compare the Dodd-Frank Act (hereafter, "DFA") and the Bank Recovery and Resolution Directive (BRRD) to deal efficiently with SIFI failures. Although our report is mainly focused on Europe, it is important to compare the European framework with its US counterpart. In Part 2, we present a series of case studies of bank failures and near failures. In Part 3, we explain the main challenges that remain to be addressed in Europe, and make a series of policy recommendations.

1 For a summary of the US financial crisis, see Acharya and Richardson (2009) and Acharya et al. (2011).

2 European Commission Press Release IP/13/1301, 20 December 2013. For a comprehensive analysis of the Eurozone crisis, see Martin and Philippon (forthcoming).

Literature review

There exists a large literature on bail-ins, bailouts, banking supervision and resolution. Our goal here is not to provide an exhaustive review, but to highlight a few recent contributions. For a good overview of the BRRD, see the recent guidebook published by the World Bank (2016a).

The discussion of bail-in takes place in the broader context of the European Banking Union, and in particular the new Single Supervisory Mechanism (SSM). Schoenmaker and Véron (2016) assembled experts from nine EU member states to describe how the SSM works in practice.³ They conclude that the SSM is “effective, tough and fair”. In particular, cross-border banking groups are now supervised by a Joint Supervisory Team (JST); supervision is more intrusive, and less vulnerable to political intervention; and there is no evidence of special treatment to any particular institution. However, the SSM lacks transparency. For example, the process by which Supervisory Review and Evaluation Process (SREP) scores are determined is viewed as a black box, and little to no information is provided to the public about the supervised banks. In addition, the SSM has not yet created a single banking market in the EU, and in some cases might even contribute to cross-border fragmentation.⁴

There are also several accounts of the recent history of banking crises in Europe. In particular, Dübel (2013) analyses eight cases of EU bank restructurings and resolutions: Anglo-Irish Bank, Hypo Real Estate, Amagerbanken, Bankia, Dexia, SNS Reaal, Laiki and Alpha Bank.⁵ In each case, the author describes the capital structure and liability management before and during the restructuring, and quantifies creditor participation (bail-in) and expected government loss (bailout). He finds that earlier cases feature lower creditor participation. In terms of policy recommendations, he argues for faster recapitalisation with increased credit participation, and if public participation is necessary, it should take the form of hybrid capital instead of shares and should use a ‘good bank’ model (horizontal balance sheet split, with dubious asset pricing to be determined in the future).

Among the many banking crises in Europe, none has been more dramatic than the one that took place in Cyprus in 2013. Demetriades (2016) describes the Cypriot crisis as the tale of two banks becoming too big to fail, too big to save and too big to regulate in the context of political corruption and poorly managed economic policies. The crisis resolution marked a radical departure from traditional bailouts. It was the first time, and hopefully the last, that depositors were forced to contribute. An important point was that 70% of deposits in the Cypriot banking system belonged to non-EU residents. However, by shifting the burden to the wealthiest and most politically connected sections of society, the bail-in created a toxic fallout that threatened the independence of the central bank and put the justice system under unprecedented political pressure.

The Financial Stability Board (FSB) has proposed key attributes for resolution regimes (FSB 2014). There are two high-level strategies: single point of entry (SPE) and multiple point of entry (MPE). SPE calls for a consolidated, group-level approach to resolution, and requires significant cooperation between jurisdictions. MPE, on the other hand, assumes that local authorities are responsible for the entities established in their countries. SPE and MPE are archetypes, and actual regimes are likely to fall somewhere in between, but the distinction is nonetheless important. In particular, most regulators recognise that the best approach depends on the nature of the bank, as discussed below.

Following the SPE approach, Huertas (2014) studies the theoretical design of a resolvable bank, i.e. “a bank that is safe to fail”. A successful resolution is one where the bank can be recapitalised without taxpayer money and can continue to perform its critical functions. In Huertas’ design, one key feature is the separation of investor obligations from customer obligations at the operating bank. This is achieved when the bank issues customer obligations – such as deposits and derivatives – and the parent issues investor obligations to third

3 The surveyed countries are France, Germany, Italy, Spain, Austria, Belgium, Greece, Netherland and Portugal. The reviews are based on public information, and on conversations with policymakers, bankers and other market participants

4 For example, the SSM has not put an end to the high home bias towards domestic sovereign debt in many banks’ bond portfolios, and has not approved many cross-border acquisitions.

5 Dübel defines two factors which affected the levels of creditor participation: restructuring delay (negative impact), and depth of participation (positive impact). In addition, the author discusses counterfactual scenarios – what could have been the results of a harsher bail-in approach? For example, in the Dexia case, what would have been the results if subordinated debtholders were forced to participate in a debt-equity swap, instead of being offered 65% in cash?

parties, with the investment of the parent in the daughter bank serving as the transmission link for losses at the bank level to losses to investors at the parent level.

On the other hand, Alvarez and Fernandez (2014) argue that MPE is the natural approach for decentralised groups such as BBVA and Santander. MPE is more likely to be efficient for retail banks present in many countries where local legal entities have much autonomy. Under SPE, local authorities would need credible guarantees from the consolidating authorities about the resources that would be available to them in case of resolution. Bolton and Oehmke (2016) formalise these points in a theoretical model.⁶ Their analysis suggests that resolution mechanisms must be designed with a careful eye on the incentives of both regulators and banks.

Schoenmaker (2016) discusses the obstacles to bank resolvability that the legal and operational structures of the systemic Eurozone banks present.⁷ The difficulty is that banks are complex entities in terms of ownership, funding, services provided and management. Both legal and operational structures matter for resolution. Moreover, the cross-jurisdictional presence of banks adds an extra layer of complexity, which makes resolution an issue for multiple national authorities.

Another issue in resolution is the distinction between individual bank failure and systemic crises. Avgouelas and Goodhart (2014) discuss the shortcomings of the bail-in regime, and argue that bailout would still be necessary in extreme cases. They review the many advantages of bail-ins, from incentives to reduced losses, but they also emphasise important shortcomings, in particular, regarding the bail-in of a 'going-concern' bank, the burden on different groups of creditors, transfer of ownership to unwanted parties, rising legal cost, inefficient *ex ante* choice of assets, liquidity concerns once the bail-in has been triggered, and creditor flight. They conclude that a bailout would still be required in case of a systemic threat, a simultaneous failure of multiple banks, or a failure of a large, complex cross-border bank. In a later paper, the authors also argue that the current bail-in regime does not help to foster early resolution of distressed loan portfolios, and propose a new Eurozone-wide asset management company (AMC) to absorb all non-performing loans (NPLs) (Avgouelas and Goodhart, 2016).

Finally, Huertas (2016) offers a number of policy recommendations for successful resolution of banks:

1. **Create constructive certainty.** Crisis management groups should develop and make known the 'preferred path' they intend to employ in resolution. This should not only evidence cooperation and coordination among authorities across borders, but also reinforce with investors that they are at risk, if the bank fails.
2. **Respect the market.** For bail-in to work, investors need to know that they are exposed to a loss, but also that there is a clear process that determines how much they can recover, and when. Huertas

6 They characterise the main trade-offs between SPE and MPE resolution in the context of a simple three-period model of global banks and national regulators. The analysis yields four main results regarding the trade-offs that arise in global cross-border resolutions, taking into account the political constraints faced by national regulators. First, resolution through a liability-side restructuring at the holding company level, as envisioned by the proposed SPE and MPE resolution models, has to go hand-in-hand with a requirement for holding companies to issue sufficient amounts of outside equity and subordinated long-term debt that provide loss-absorbing capacity in a crisis. Absent such a requirement, resolution exclusively through a liability-side reconstruction becomes infeasible, leading to either a disorderly liquidation or a tax-funded bailout. Second, SPE resolution is potentially more efficient than MPE resolution because it permits cross-jurisdictional transfers. The resulting diversification implies that successful SPE resolution can, in principle, be implemented with less loss-absorbing capital than MPE resolution, allowing the financial institution to provide more socially valuable banking services. Unfortunately, these benefits of SPE resolution may be difficult or impossible to implement. Third, from an *ex ante* perspective, national regulators may not find it in their interest to set up SPE resolution in the first place. Under these circumstances, MPE resolution is the only viable option. Fourth, national regulators could prefer to ring-fence assets *ex post*, leading to a breakdown of the SPE resolution process, rather than cooperating in a planned SPE resolution. Under these circumstances, MPE resolution, under which loss-absorbing capacity is not shared across jurisdictions, avoids an unplanned *ex post* breakdown of the resolution process and is preferable. Lastly, the analysis shows that incentives for national banking subsidiaries may differ across MPE and SPE resolution. SPE resolution dampens incentives insofar as it involves an overhang of short-term debt and transfers of cash-flow to the other jurisdiction. On the other hand, SPE can allow for the retention of a larger inside equity stake, which has a positive effect on incentives.

7 The study focuses on the 30 largest banks that have assets of over €10 billion and belong to parent companies headquartered in the EU. These can be further divided according to other criteria, such as structure (i.e. banking versus insurance services, whether they are centralised or decentralised global banks, who makes decisions for the group as a whole), their global reach (i.e. whether they carry business mainly in the Banking Union and/or outside the Banking Union) and so on. So what are the challenges to resolution? First, resolution depends on the spillover risks and the operational structure of each bank. For example, an SPE resolution (i.e. a single authority deals with resolution) is broadly suitable for banks with centralised structures, while an MPE resolution (i.e. multiple authorities deal with resolution) is broadly suitable for banks that use a decentralised model. However, both resolution approaches have strengths and weaknesses based on trade-offs between efficiency and autonomy, implementability, and so on. Schoenmaker recommends that the Single Resolution Board (SRB) should request financial groups to move towards a structure headed by a holding company for their operations throughout the Banking Union area, which would then effectively be treated as a single jurisdiction. Second, resolution depends on the type of the bank's core business lines: banking, insurance, etc. The author's recommendation is that the SRB should impose measures in the resolution plan to ensure effective and clear separation if the legal structure does not already clearly separate the banking and insurance parts of financial conglomerates. Third, resolvability is also impacted by the contradiction between banks' incentives to not reveal negative information early and the SRB's incentives to resolve things quickly. The author's recommendation is that if it appears that banks are withholding relevant information from the SRB, then the SRB should be given more staff with direct access to banks, like the Federal Deposit Insurance Corporation (FDIC). Lastly, another impediment to the resolution of a large bank is lack of funding and liquidity provision. The author argues for enhanced clarity over possible bridge financing and liquidity financing, and for provision of liquidity by the ECB rather than the national central banks. However, it is important to first put banks in resolution before providing them emergency liquidity funding.

suggests harmonising the credit hierarchy across member states and creating an 'intermediate' class of obligations that are senior to subordinated debt but junior to operating liabilities.

3. **Maintain continuity.** Authorities should take steps to assure that a bank-in-resolution retains its authorisation(s) and license(s) and continues to have access to market infrastructure.
4. **Look after liquidity.** There should be no forbearance at the point of non-viability (PONV). Banks should be put into resolution and not given emergency liquidity assistance. Liquidity assistance should be transferred from national central banks to the ECB.

We now turn to a comparison of the US and EU resolution frameworks.

Part 1: Overview of the US and EU frameworks

In this section, we present the main features of the US and EU resolution frameworks and explain their similarities and differences, followed by a critical review of both resolution frameworks.

US resolution framework

The DFA is split between two major sets of regulations: Title 1 and Title 2. The main objective of Title 1 is to extend the federal evaluation and oversight of large financial institutions, and thereby improve the efficiency of risk management. Two government departments have been created, the Financial Stability Oversight Council (FSOC) and the Office of Financial Research (OFR). Furthermore, Title 1 broadens the powers of the Board of Governors of the Federal Reserve System (hereafter, “Fed” or “FRB”), which is entitled to supervise nonbank financial companies predominantly engaged in financial activities and large bank holding companies considered to be SIFIs. A central innovation of Title 1 is the resolution plan rule, pursuant to which specific financial institutions must submit, on a yearly basis, living wills describing the strategy for an orderly resolution under the US Bankruptcy Code in the event of material financial distress or failure, while mitigating serious adverse effects on the financial stability. This rule applies to bank holding companies with total consolidated assets of \$50 billion or more and nonbank financial companies designated by the FSOC.

These resolution plans include the identification of the core business lines and of the critical operations as well as their mapping to the corresponding legal entities, the identification of funding sources, the assessment of the liquidity needs and the systems used to ensure adequate management information. The FRB and the Federal Deposit Insurance Corporation (FDIC) perform a completeness and credibility review of the resolution plans.

Resolution plans provide evidence to the regulators on the capacity of the financial institution to face an insolvency situation. Internationally, the submission of living wills to financial authorities has been successful, as for example in Switzerland where systemically relevant financial institutions submitted detailed resolution plans to the Swiss Financial Market Supervisory Authority (FINMA) in 2016. Such living wills provide useful information on the legal structure of SIFIs, on the possible resolution measures which may be taken in a crisis situation (e.g. access to central bank facilities, forecasts on the capacity to use the repo-market under consideration of the existing pool of liquid assets), and on the impact of such resolution measures on the capital and liquidity situation of the financial institution. Non-realistic resolution plans may lead to the sale of illiquid assets and to a simplification of the structure of the financial institution (e.g. diminution of the number of subsidiaries). As an example, the resolution plans of five major US banks were rejected by the FDIC and the FRB during April 2016. The main reasons for rejecting the resolution plans were the complexity of the legal structure, the inadequacy of the business lines determination as well as the insufficient access to the liquidity pool, including non-credibility of the refinancing strategy of the subsidiaries (Hamilton and Dexheimer, 2016).

The rules of Title 1 of the DFA applicable to resolution plans can therefore be considered as an essential feature of the US resolution framework.

The main objective of Title 2 is to broaden the resolution powers granted to the FDIC. The U.S. resolution framework relies namely on the competence of a public authority to ensure the orderly restructuring or winding-down of SIFIs. The corresponding resolution rules have been translated into Title 12 of the United States Code (USC), also known as the US Bankruptcy Code, in Sections 5301-5394.

The major difference between the US Bankruptcy Code and the DFA is the guiding principle of the insolvency procedures. For commercial firms restructured or liquidated under Chapter 11 or Chapter 7 of the US Bankruptcy Code, the objective of the procedure is to maximise the firm’s value so that creditors’ losses are minimised. Hence, US bankruptcy law provides a large playing field to contractual arrangements. In contrast, the DFA aims to preserve financial stability. Therefore, exceptional resolution powers are granted to the FDIC with the objective of ensuring the continuation of the essential functions of the financial institution. This may involve overriding the contractual agreements between creditors and debtor, for example, when a creditor is considered

as essential to the continuity of business-as-usual operations and as such is granted a higher-ranking position in the insolvency procedures. A further difference rests in the fact that the bankruptcy judge considers the private interests of the involved parties during an insolvency procedure applicable to commercial firms, whereas the FDIC shall act in the public interest.

There are three cumulative conditions for the opening of a resolution procedure under the DFA rules, as described below:

- the restructuring of the failing financial institution through contractual arrangements is not possible
- the application of corporate insolvency law would lead to economic inefficiencies, and
- the bankruptcy of the financial institution could endanger financial stability.

The “contractual arrangements” refer to the resolution or restructuring of a failing financial institution through the private sector. In other words, the consideration of a private solution shall rank first. An interesting instrument is the issuance of convertible bonds, which contain contractual features allowing the conversion of debt into equity. Such bonds play a role as a form of bail-inable long-term debt. A crucial point is therefore the definition of the contractual trigger clause. So-called ‘low-trigger’ CoCos are converted to equity in case where the financial institution breaches the minimum capital requirements, whereas ‘high-trigger’ CoCos are used to fulfil the going-concern capital requirements. Hence, the trigger definition is based on the ratio between eligible capital and risk-weighted assets.⁸ In our view, only high-trigger CoCos provide an efficient contractual-based solution which would qualify as “contractual arrangement” under the DFA framework. Such convertible debt enables failing financial institutions to restore their capital on a going-concern basis, whereas low-trigger CoCos intervene too late and as such cannot efficiently prevent the intervention of the resolution authority.

It is also worth noting that the issuance of contractual bail-inable debt gives a higher credibility to the conversion capacity of the bank in a crisis situation – especially in the case of an international restructuring or resolution of a financial institution. As an example, discussions arose in Switzerland relating to the legal enforcement of the bail-in tool by the FINMA in the case where the securities are issued abroad – namely, UBS and Credit Suisse, which issued a major part of their debt in the UK or US jurisdictions. There are doubts around the legal ability of the FINMA to exercise a statutory bail-in power and to write down such debt in a crisis scenario, given that Switzerland is not part of the EU. The same problem may arise after Brexit for the debt issued by European financial institutions in the UK, thus creating legal uncertainty. CoCos hence have the advantage of international legal acceptance, given their contractual characteristics.

The DFA rules are applicable to “financial companies”, which are defined as bank holding companies, nonbank financial companies supervised by the Board of Governors, and holding companies or subsidiaries which engage predominantly in activities that the Board of Governors has determined are financial in nature or incidental thereto. The engagement is “predominant” when 85% of the profits of the financial institution come from financial activities. The concept “financial activities” is defined under Section 1843(k)(4), Title 12 USC and involves, for example, financial services. Note that insured depository institutions are excluded from the scope of the DFA (Section 1813(c)(2), Title 12 USC). Such financial institutions are explicitly excluded from the definition of the “financial company”, alongside with the insurance companies: *“any subsidiary of any company predominantly engaged that the Board of Governors has determined are financial in nature (...) other than a subsidiary that is an insured depository institution or an insurance company”*. These financial institutions are submitted to specific liquidation rules.

As described above, the FDIC is allowed to use its resolution powers if a financial institution is considered systemically relevant and is failing or is likely to fail. The characterisation of a financial institution as a SIFI is performed on a case-by-case basis by the FSOC. Note that the financial institution is considered to be failing or likely to fail if one of the following conditions is met:

- an insolvency procedure has been or will promptly be commenced under the Bankruptcy Code;
- the financial losses incurred or likely to be incurred will reduce completely or substantially the capital of the financial institution;
- the assets of the financial institution are or are likely to be less than its obligations to creditors and others; or

⁸ For further information, see Avdjieiev et al. (2013).

- the financial institution is, or is likely to be, unable to pay its obligations in the normal course of business.

In this context, an essential feature of the DFA is that the conditions for opening the resolution procedure are examined at the level of the holding company or at the level of the subsidiary company. The resolution strategy followed by the regulator is namely the SPE as opposed to the MPE model. Hence, the examination of the above-mentioned conditions is performed at the company level for each financial institution of the group. There is no consideration of the group as a whole on a consolidated basis (Section 5383(4), Title 12 USC). Consequently, the resolution measures can be taken at the company level only. As an example, if the resolution is opened at the holding level because the conditions for opening the procedure are met for the holding company only, the FDIC can use its resolution powers against the bank holding company only and not against the subsidiaries. An exception with respect to failing subsidiaries of the holding company is possible under the specific cumulative conditions of Section 5390(a)(1)(D), Title 12 USC, as follows:

- the subsidiary is in default or in danger of default,
- the appointment of the FDIC as receiver of the subsidiary would avoid or mitigate serious adverse effects on the financial stability or economic conditions of the United States, and
- the appointment of the FDIC as receiver of the subsidiary would facilitate the orderly liquidation of the covered financial company.

However, it should be noted that the extension of the bail-in power to the subsidiaries is considered as rather hypothetical in practice. It is therefore worth highlighting that, in a resolution system relying only on the SPE model, the triggering conditions of the procedure, the definition of the point of time to start the resolution and the valuation process of the holding assets are of crucial importance.

Furthermore, another essential feature of the DFA is the limitation of the procedure outcome to the liquidation of the financial institution (Section 5384(a), Title 12 USC). Thereby, the activities of the financial institution may provisionally be carried on (exclusively to ensure its orderly winding-down). This objective is clearly affirmed at the beginning of Subchapter II "Purpose of orderly liquidation authority": *"the purpose of this subchapter to provide the necessary authority to liquidate failing financial companies that pose a significant risk to the financial stability of the United States in a manner that mitigates such risk and minimizes moral hazard"*.

The resolution procedure under the DFA begins with a transfer of the rights and assets from the financial institution in liquidation to the FDIC: *"the Corporation shall (...) succeed to all rights, titles, powers, and privileges of the covered financial company and its assets, and of any stockholder, member, officer, or director of such company and title to the books, records, and assets of any previous receiver or other legal custodian of such covered financial company"* (Section 5390(1)(A), Title 12 USC).

The FDIC therefore plays a central role as the unique successor to the failing financial institution – without right of delegation to a third party – until the end of the liquidation procedure. The management of the financial institution is removed following the appointment of the FDIC as a receiver (Section 5386(4), Title 12 USC). In particular, the FDIC takes over all the powers previously granted to the management of the financial institution, collects all obligations and money owed to the financial institution, pays all valid obligations of the financial institution which are due and payable at the time of the appointment of the FDIC as receiver, operates and performs all functions in the name of the financial institution, and manages the assets and property of the financial institution. Thereby, the FDIC shall ensure the *"maximization of the value of the assets within the context of the orderly liquidation"* and may utilise services provided by the private sector (such as loan portfolio asset management or financial services) (Section 5390(a)(B) and (L) Title 12 USC).

The following resolution measures are envisaged by the DFA:

- sales of assets to a third-party (Section 5390(a)(1)(D))
- transfer of the assets to a bridge financial company (Section 5390(a)(1)(F))
- merger of the financial institution with another company (Section 5390(a)(1)(G))
- transfer of separated assets and/or liabilities to a third party without the need for any approval, assignment, or consent of the related parties (Section 5390(a)(1)(G))
- bail-in of the creditors and shareholders consistent with the priority of claims provisions of Section 5390 of Title 12 U.S.C. (Section 5390(a)(1)(M))

Note that the wording of the DFA gives the FDIC broad discretionary power for selecting the appropriate resolution measures to be taken: "*the Corporation shall (...) liquidate and wind-up the affairs of a covered financial company, in such manner as the Corporation deems appropriate (...)*" (Section 5390(a)(1)(D), Title 12 USC).

As mentioned above, the resolution powers of the FDIC include the bail-in of the senior and junior debt as well as of the shareholders' equity. The bail-in power is ruled in Section 5390(a)(1)(M) of Title 12 USC, and is exercised based on the guiding principle of Section 5384(a)(1), pursuant to which, "[t]he authority (...) shall be exercised (...) so that creditors and shareholders will bear the losses of the financial company (...)" . It is worth noting that the equity and debt are written off as part of a liquidation procedure and not as part of a restructuring procedure, which does not correspond to the classical meaning of a bail-in. The consequence of a liquidation is namely the allocation of the losses to the creditors and shareholders of the insolvent company. Writing off the debt and equity before the end of the liquidation procedure is, however, a specific feature of the DFA compared to corporate insolvency law. This should allow the continuation of the activities of the failing financial institution to ensure its orderly winding-down. Furthermore, the application of the bail-in power may be used to ensure the transfer of assets and liabilities to a bridge financial company (i.e. the liabilities of creditors are written-off before the transfer to a bridge financial company to ensure the continuation of the activities transferred).

The DFA does not give indications on the calculation of the amount of the debt and/or equity reduction to be performed. The valuation criteria to be used to determine the value of the claims to be written-off and the corresponding losses incurred by the financial institution are also left to the discretion of the resolution authority. This consideration is based on the wording of Section 5390(a)(7)(A) of Title 12 USC, pursuant to which, "*the Corporation as receiver may, in its discretion and to the extent that funds are available, pay creditor claims*". However, the application of the so-called 'no creditor worse-off' principle, pursuant to which creditors paid off shall not receive less than the amount they would have been entitled to if the financial institution had been liquidated under Chapter 7 of the Bankruptcy Code, is a safeguard for the creditors. Furthermore, creditors shall not receive more than the nominal value amount of the claim.

The mandatory rules relating to the ranking of claims apply as described thereunder (Section 5390(b)(1)):

- secured claims remain unaffected and shall be reimbursed first,
- administrative expenses of the FDIC, amounts due to the United States as well as wages, salaries and specific related expenses rank before all other unsecured debt,
- senior unsecured debt and any other general liability of the financial institution shall rank thereafter.
- subordinated debt shall be reimbursed after the senior unsecured debt pursuant to the contractual arrangements, and
- the shareholders shall not receive payments unless all secured and unsecured creditors have been completely reimbursed.

Some important exceptions may however modify the equality of treatment of creditors similarly situated. Firstly, funds provided by the FDIC within the framework of the Orderly Liquidation Fund (OLF) established in the Treasury of the United States rank before all remaining unsecured debt. The OLF is financed by the proceeds of obligations issuance by the FDIC to the Secretary of the United States (Section 5390(n)). This issuance qualifies as public debt transaction of the United States. Thereby, the obligation issuance for each insolvency procedure is limited to (i) 10% of the total consolidated assets of the financial institution during the 30 days following the appointment of the FDIC as receiver, and (ii) 90% of the total consolidated assets that are available for repayment following the 30-day period. The valuation of the consolidated assets is based on the most recent financial statements published by the financial institution.

Second, Section 5390(b)(4)(A) provides for further exceptions to the ranking of creditors' claims described above, for the following cases:

- maximisation of the value of the assets of the financial institution,
- initiation and continuation of the operations essential for implementing the receivership or a bridge financial company,
- maximisation of the present value return from the sale or other disposition of the assets of the financial institution, and
- minimisation of losses realised upon the sale or other disposition of the assets of the covered financial company

The above-mentioned 'no creditor worse-off' principle also applies to these exceptions. It is worth noting, however, that the conditions of determination of the hypothetical value of the claims under the 'no creditor worse-off' rule – especially the valuation method of the balance sheet on a gone-concern basis – are not further described.

These exceptions thus leave broad discretionary powers to the FDIC to modify the ranking order of the claims. In 2011, a regulation of the Code of Federal Regulations (CFR) explained which liabilities the FDIC will consider as "privileged" during the resolution procedure, i.e. will not be subject to the bail-in power (refer to Section 380.27 of Title 12 CFR), as follows: *"partially funded, revolving or other open lines of credit that are necessary to continuing operations essential to the receivership or any bridge financial company (...) [and] any contracts to extend credit enforced by the receiver"*.

The essential characteristics of the Title 2 DFA can therefore be summarised as follows:

- a. entire delegation of the resolution competence to a public authority with limited and discretionary involvement of the private sector;
- b. liquidation procedure without possibility of a restructuring of the financial institution – except for the limited case of the bridge financial company resolution power;
- c. single point-of-entry liquidation procedure based on the liquidation of the holding company with limited consideration of the subsidiary companies;
- d. discretionary appreciation power of the public authority in the selection of the adequate resolution power(s);
- e. possibility to finance the resolution procedure based on public debt up to 90% of the consolidated assets of the financial institution; and
- f. discretionary power granted to the public authority to breach the equality of treatment of similarly situated creditors.

Title 2 of DFA represents a specific regime applicable to SIFIs, whose application is submitted to the fulfilment of cumulative conditions, as described above. Especially, if public authorities determine that the application of corporate insolvency law would not lead to economic inefficiencies, the SIFI may be restructured under Chapter 11 or liquidated under Chapter 7 Bankruptcy Code. Hence, it is worth presenting the essential features of both insolvency procedures, which are part of the US resolution framework. *Lehman Brothers* therefore represents a unique case of resolution of a SIFI under corporate insolvency law.

The US Bankruptcy Code has general rules applicable to restructuring and liquidation procedures, which are contained in Sections 101-562 of Title 11 USC. The key elements comprise the conditions for requesting an insolvency procedure, the automatic stay on enforcement procedures of creditors' claims (including sale of collateral), the protection of secured claims fulfilling the required conditions, the priority order of claims based on the contractual arrangements, the powers of the judge and the avoidance of fraudulent transfers. The powers of the judge appointed to administrate the debtor's estate include, in particular, using, selling or leasing the property of the estate, obtaining credit to ensure the continuity of the business activities and assuming or rejecting executory contracts or unexpired lease of the debtor. New credits obtained to finance the insolvency procedure are privileged against the remaining unsecured debt (i.e. debtor-in-possession financing). To ensure the continuity of the activity of the debtor in the normal course of business, all contractual termination clauses conditional to the opening of an insolvency procedure are suspended.

Chapter 11 of the Bankruptcy Code aims at restructuring a failing company, while minimising the costs for the creditors. Given that the activity continues, the management function is exercised by the debtor. The debtor is entitled to dispose of the estate and is submitted to trust obligations against the creditors. In this case, the role of the appointed judge is limited to financial accounting services, to the examination of the creditors' claims and to the analysis of the financial situation of the debtor. Note that transactions that are not part of the normal course of business can only be concluded with the approval of the judge. Where this is necessary to preserve the interests of the bankrupt's estate and following creditors' demand with the required majority, the management of the failing company may be completely transferred to the appointed judge.

Creditors are allocated to different committees, based on the ranking of their claims. Creditors who are not affected by the plan and the out-of-the-money creditors are stripped of their voting rights on the plan. This process is referred to as 'cram-down'. The determination of the creditors partially in-the-money and entitled to vote on the plan is based on the debtor's estate. As an example, if the value of the debtor's estate is 150,

the value of the secured claims 100, the value of the unsecured claims 50 and the value of the equity 10, the secured creditors and the shareholders will not be entitled to vote on the plan. The secured creditors will be entirely paid and the shareholders will be wiped-out. The unsecured creditors will be entitled to vote on the plan and represent as such so-called 'fulcrum security'. If necessary, creditors can also be split within several voting committees (e.g. unsecured versus secured creditors). The creditors' committee consists of the creditors with the seven highest claims. Committees are entitled to participate in the preparation of the insolvency plan, to consult with the judge or debtor in possession concerning the administration of the case, and to investigate the acts, conduct, assets liabilities, and financial condition of the debtor, the operation of the debtor's business as well as the desirability of the continuance of such business.

Once formulated, the insolvency plan is approved by the creditors entitled to vote on the plan (i.e. fulcrum security). The approval of all creditors whose claims remain unchanged following the implementation of the insolvency plan is deemed as given, whereas shareholders and creditors who lose all their rights under the insolvency plan are deemed to have refused. The insolvency plan rules the strategy of the business's continuation as well as the financing of the insolvency procedure (e.g. through issuance of new equities or debt securities, writing-down of equities and junior claims and/or conversion of bonds in equities). Following the approval of the creditors entitled to vote on the plan (i.e. fulcrum security) and the confirmation of the judge, the insolvency plan comes into force with legal effect.

Chapter 7 of the US Bankruptcy Code aims at liquidating a failing company. In this case, the administration power and the right of disposal of the debtor's assets are transferred completely to the appointed judge from the beginning of the insolvency procedure. This appointed judge shall liquidate the company. A temporary continuation of the business activities is possible if this is necessary for the orderly winding-down and liquidation of the company. Following the termination of the insolvency procedure, the liquidation proceeds are distributed to the creditors and shareholders pursuant to the contractual arrangements.

Compared to the specific resolution procedure under the DFA, the US Bankruptcy Code gives an important role to the creditors. Furthermore, the insolvency procedures under Chapter 7 and Chapter 11 are respectful of the contractual clauses elaborated by the parties. The insolvency plan can be considered as a contractual arrangement between debtor and creditors, submitted to the principle of majority. A breach of the contractual ranking of the claims is only possible under strict conditions, whereby the main cases are the privilege given to the financing of the insolvency procedure and the changes agreed upon as part of the insolvency plan.

It shall also be mentioned that Title 2 DFA may be replaced by a special bankruptcy chapter applicable to financial institutions. This reform would be introduced by the Taxpayer Protection and Responsible Resolution Act creating a Chapter 14 for banks and replacing Dodd-Frank's orderly liquidation authority. This legislation would abolish the resolution power of the FDIC and replace it with an orderly bankruptcy process with some specific features adapted to the financial system. Hence, a future rapprochement of the US resolution framework with the corporate bankruptcy law cannot be excluded.

The following section provides a detailed overview of the EU resolution framework given by the BRRD from 2014. This overview takes into account the modifications made by the proposal for a directive amending the BRRD published in November 2016 by the European Commission.

EU resolution framework

The BRRD aims at harmonising the procedures for resolving all banks in the European Union, including large and complex ones. It is important to emphasise that the BRRD framework not only covers the resolution process and the corresponding application of the bail-in power, but also provides an early intervention framework to prevent banking insolvency. The BRRD also governs the establishment of recovery plans in the phase before the resolution.

A specificity of the European Union – in comparison to the United States – is the role of the Directorate-General for Competition (DGCOMP) within the European Commission. DGCOMP is responsible, together with the national authorities, for the direct enforcement of the EU competition rules. The state aid framework represents an important part of competition policy. State interventions within the EU must contribute to common interest objectives and economic growth. Pursuant to Article 107 of the Treaty on European Union, "*any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall (...) be incompatible*

with the internal market". Exemptions are granted under strict conditions, such as the remediation of a serious disturbance in the economy of a member state. During the financial crisis of 2008, the European Commission adopted several communications to provide a detailed guidance on the criteria for the compatibility of state aid with the internal market.⁹

The interaction between DGCOMP and the supervision and resolution authorities in the BRRD framework is as follows: "*When the use of the resolution tools involves the granting of state aid, interventions should have to be assessed in accordance with the relevant state aid provisions*" (Preamble No. 47). Furthermore, the BRRD submits the granting of state aid to specific additional conditions, as follows:¹⁰

- the state aid is granted to remedy a serious disturbance in the economy of a member state and preserve financial stability; and
- the state aid shall be granted in the form of a state guarantee to back liquidity facilities provided by a central bank, or of newly issued liabilities or in the form of an injection of own funds or purchase of capital instruments at a market price.

From a governance perspective, it should also be noted that the Banking Union relies on two pillars: the Single Supervisory Mechanism (SSM) and the Single Resolution Mechanism (SRM). The ECB is the main institution for banking supervision and as such, was entrusted with specific supervisory tasks involving daily supervision of the banks under its responsibility.¹¹ The important point is that the SSM is part of the ECB, while the SRB is not an institution but an inter-agency of the commission and the council.

The Single Resolution Board (SRB) is part of the SRM and aims at ensuring the exercise and coordination of bank resolution at the European level. Within the BRRD framework, the SRB prepares and monitors the resolution decisions centrally. The decision to initiate a liquidation or resolution of the financial institution is taken either by the ECB or by the SRB. Furthermore, the SRB is responsible for drawing the resolution plans, adopting early intervention measures, setting the level of minimum requirement for own funds and eligible liabilities (MREL) and exercising the bail-in power during a resolution.¹²

The SRB is accountable to the European Parliament and the European Council for decisions taken and does not qualify as such as an institution.¹³ The SRB started in January 2015 and published a first Annual Report in July 2016, with an emphasis on the resolution planning activities. During 2015, the SRB cooperated with the SSM. A Memorandum of Understanding (MoU) was agreed upon with the ECB to set up the aspects of the cooperation on recovery and resolution matters (e.g. sharing of information and data).¹⁴ The collaboration between the SSM and the SRB has not been defined as part of a specific agreement and is rather informal in nature.

Given that the EU resolution framework represents one element of a complex set of financial regulations, it is useful here to first provide an update relating to the recent European Commission proposals on the Capital Requirements Directive (CRD IV) and on the Market in Financial Instruments Directive (MiFID II). In 2015, the European Commission launched a public consultation on the impact of the CRD IV rules on the financing of the European economy. Based on the results of this consultation and on further analysis, the European Commission proposed amendments to the CRD and the MiFID. These amendments cover especially the following points:¹⁵

- a binding leverage ratio of 3% – this shall prevent financial institutions from excessively increasing lending with a low capital;
- a binding net stable funding ratio (NSFR) requiring credit institutions and investment firms qualifying as systemically important to finance long-term assets with a stable source of funding on the liabilities side;
- binding requirements on the risk-sensitivity of own funds for financial institutions having a trading book in securities and derivatives (i.e. subject to market risk, including daily volatility);
- application of a principle of proportionality for smaller financial institution;

⁹ Refer to European Commission Communication 2013/C 216/01 for further details.

¹⁰ Article 32 Section 4(d) of Directive 2014/59/EU.

¹¹ Council Regulation No. 1024/2013 of 15 October 2013.

¹² S. Regulation No. 806/2014 of the 15 July 2014.

¹³ For further details on the SRM, refer to the European Commission memo from 15. April 2014, "a single resolution mechanism for the Banking Union - frequently asked questions".

¹⁴ SRB Annual Report 2015, p. 15. Refer also the MoU between the SRB and ECB in respect of cooperation and information exchange from 22 December 2015.

¹⁵ For further details, refer to the FAQ from the European Commission from 23 November 2016 (http://europa.eu/rapid/press-release_MEMO-16-3840_en.htm).

- changes relating to the eligible capital definition used to calculate the large exposure limit in order to lower the concentration risk of systemically important institutions;
- clarification and harmonisation of the capital add-ons relating to Pillar 2 of the Basel framework (institution-specific measures) among the member states; and
- introduction of new rules relating to the definition of the financial holding companies engaging in non-financial activities. To simplify the application of the standards relating to the internal loss-absorbing capacity and the resolution process for non-EU SIFIs, financial institutions which have the same ultimate parent company in a third-party country will be required to establish an intermediate EU parent undertaking subject to the CRD IV rules.

As described above, there is a link between the part of the BRRD relating to the prudential supervision and that relating to the resolution process. In particular, we would like to emphasise the connection between the recovery plans (living wills) and the MREL ruled in Article 1-25 of the BRRD, whereby the MREL applicable to each financial institution should reflect the resolution strategy pursuant to the recovery plan (BRRD Preamble, No. 80). With the entry into force of the BRRD in 2016, the resolution authorities shall determine bank-specific levels of MREL with an appropriate deadline to achieve the fulfilment of the requirements. The MREL framework is completed by the total loss-absorbing capacity (TLAC) standard, applicable to systemic relevant financial institutions at the international level and to be transposed as of 2019. Both the MREL and TLAC requirements shall ensure that banks hold sufficient amounts of readily bail-inable liabilities.

Moreover, the consumer protection rules applicable in the European Union shall be clearly differentiated from the prudential rules and the BRRD resolution framework. This question is of particular relevance where retail investors are involved in a resolution procedure, as for example in the case of the Italian banks. EU consumer law is independent from the BRRD framework and consists of a set of six directives relating to unfair commercial practices, the sale of consumer goods, unfair terms in consumer contracts, the indication of the price and products offered to customers, misleading and comparative advertising and the protection of customers' interests. The European Banking Authority (EBA) ensures consumer protection in financial services across the EU, covering product oversight for retail banking products as well as miss-selling practices of retail banking products. The EBA publishes guidelines pursuant to Article 16 of Regulation (EU) No 1093/2010 of the European Parliament and of the Council of 24 November 2010. EU consumer law and the BRRD framework shall be strictly separated and apply independently from each other.

In line with the DFA and contrary to most of the applicable member states' corporate insolvency laws, the BRRD gives an essential role to public authorities in case of the failure of a financial institution. Pursuant to Article 3(2) of the BRRD, the resolution authorities shall be "*a public administrative authority or authorities entrusted with public administrative powers*".

Pursuant to the BRRD preamble, the EU resolution framework shall especially ensure the "*continuity of the institution's critical financial and economic functions, while minimising the impact of an institution's failure on the economy and financial system*".

The objectives of the BRRD are listed in Article 31(2) of the Directive as follows:

- ensuring the continuity of the critical functions of the financial institution;
- avoiding a significant adverse effect on the financial system;
- protecting public funds by minimising reliance on extraordinary public financial support;
- protecting depositors and investors covered by EU regulation; and
- protecting client funds and client assets.

The maximisation of the enterprise's value applies secondary to these objectives, as follows: "*the resolution authority shall seek to minimise the cost of resolution and avoid destruction of value unless necessary to achieve the resolution objectives*".

The scope of the BRRD is defined in Article 1 of the Directive, pursuant to which the EU resolution framework is applicable to credit institutions and investment firms; to financial institutions established in the EU which are the subsidiaries of such firms; to financial holding companies, mixed financial holding companies and mixed-activity holding companies as well as to their parent companies; and to branches of financial institutions which are established outside of the EU (under specific conditions). "Mixed financial holding company" refers to a parent company which forms a financial conglomerate together with its subsidiaries (i.e. a large financial group active in different financial sectors), while "mixed activity holding company" refers to non-financial

institutions whose subsidiaries include at least one financial institution. Hence, the scope of the BRRD is based on a purely formal definition of the concept of a “financial institution”.

From an international perspective, the BRRD allows for both a single point-of-entry approach and for a multiple point-of-entry approach, as affirmed in the preamble (refer to No. 80). The conditions for opening a resolution procedure can therefore be examined on a single entity level or on a consolidated basis. This is stated in Article 33(4) of the BRRD, pursuant to which resolution measures can be applied to financial holding companies, mixed financial holding companies, mixed-activity financial companies and parent financial holding companies even if the conditions for opening a resolution procedure are not fulfilled for such entities. The application of an MPE procedure is conditional on the fulfilment of the resolution conditions for one or more of the subsidiaries of the group. Furthermore, the failure of the holding shall threaten one or more financial institutions, or the group as a whole.

The conditions for opening a resolution procedure are laid down in Article 32(4) of the BRRD as follows:

- a breach, or expected breach in the near future, of the regulatory requirements (e.g. the incurred losses leads to a breach of the capital requirements) relating to the authorisation to exercise financial activities (e.g. a banking license);
- the assets of the institution are less than its liabilities (i.e. overindebtedness), or are objectively expected to be in the near future;
- the institution is unable to pay its debts or other liabilities on due date (i.e. illiquidity), or is objectively expected to be unable to do so in near future; or
- extraordinary public financial support is required by the financial institution

Furthermore, additional general conditions shall be met as described under Article 32(1) of the BRRD to allow the winding-down or restructuring of a financial institution under the BRRD framework as follows:

- the decision to place the financial institution under the resolution framework shall be made by the authority responsible for the prudential supervision;
- no alternative private sector measures can prevent the failure of the financial institution; and
- a resolution action is necessary in the public interest, i.e. it is necessary for the achievement of and proportionate to one or more of the resolution objectives, whereby a winding-up under the normal insolvency proceedings would not meet those resolution objectives to the same extent.

It is worth noting that, in certain specific situations, demand for extraordinary public financial support is not considered as an opening case of a resolution procedure under the BRRD. This is the case where:

- a state guarantee to back liquidity facilities provided by a central bank according to the central bank's conditions is granted to the financial institution;
- a state guarantee of newly issued liabilities is granted to the financial institution; or
- an equity participation in the form of an injection of own funds or a purchase of capital instruments is granted by the state to the financial institution, and none of the above-mentioned conditions is fulfilled (i.e. breach of regulatory requirements, illiquidity or over-indebtedness).

For each of those three exceptions, public financial support shall be granted only to solvent institutions and shall be conditional on final approval pursuant to the EU state aid framework. Furthermore, the public financial support granted shall be temporary and of a precautionary nature only. Such support shall aim at preserving the financial stability of the concerned member state as well as preventing a serious disturbance in its economy in a proportionate manner. Additionally, such support shall not be used to offset losses incurred by the financial institution.

To summarise, the articulation between the state aid framework on the one hand, and the BRRD resolution rules on the other hand, works as follows:

1. either the conditions of Article 32 BRRD relating to the opening of the resolution procedures – as well as the conditions from EU competition rules – are satisfied and the BRRD rules do not apply; or
2. the above-mentioned conditions are not satisfied, and the BRRD rules apply.

The first case provides more flexibility and should be used when there is a threat to financial stability. The second case is the standard one, when the fact that the financial institution required state aid is considered as an opening condition of the resolution procedure and the BRRD framework applies entirely.

Pursuant to the preamble of the BRRD, the resolution authority has the legal power to replace the management of the failing or failed financial institution. The resolution authority shall assess whether the retention of management members is necessary to achieve the resolution objectives. In both cases, the resolution authority takes control over the financial institution, either through direct intervention or through an executive order to the management. Pursuant to the general principles governing resolution under Article 34(1) of the BRRD, the management of the financial institution shall provide all necessary assistance for the achievement of the resolution objectives. In particular, member states shall ensure that national resolution authorities assume the following resolution powers (Article 72 of the BRRD):

- operate and conduct the activities and services of the institution under resolution with all the powers of its shareholders and management body; and
- manage and dispose of the assets and property of the institution under resolution.

Furthermore, the resolution authority may appoint a special manager pursuant to Article 35 of BRRD. The special manager shall have all the powers of the previous management members and of the shareholders of the financial institution, and shall exercise such powers under the control of the resolution authority. The powers granted to the special manager may be limited by the resolution authority or subject to its previous approval. The resolution authority may remove the special manager at any time during the resolution procedure.

The special manager shall implement the resolution measures following the decisions of the resolution authority (e.g. capital increase, reorganisation of ownership structure, takeover transaction). Inconsistent provisions of the statutes of the financial institution are removed.

The applicable resolution outcomes are the restructuring or the liquidation of the financial institution. A restructuring shall address the reasons of failure and be achieved based on the reorganisation of the activities and businesses of the financial institution. Moreover, the financial burden to the public sector and distortion of competition caused by state aid shall be limited. Hence, the restructuring option is only envisaged in the BRRD following the application of the bail-in tool – with the objective of restoring the capital of the failing institution. The content of the “business reorganisation plan” is described in Article 32 of the BRRD. The plan shall be drawn up one month after the application of the bail-in resolution measure by the management of the financial institution or the special manager appointed by the resolution authority. It shall include at least the following elements:

- an analysis of the factors and issues that caused the failure of the financial institution;
- measures aiming to restore the long-term viability of the financial institution; and
- a timetable for the implementation of these measures.

The measures of the business reorganisation plan may consist of the following:

- reorganisation of the activities of the financial institution;
- changes to the operational systems and infrastructure of the financial institution;
- withdrawal from loss-making activities;
- restructuring of competitive existing activities; and/or
- sale of assets or of business lines.

If a restructuring is not possible as the financial institution is considered to be a gone-concern, an orderly wind-down procedure shall take place in accordance with the above-mentioned objectives of Article 31(2) of the BRRD. The objective here is the realisation of the assets of the financial institution.

The following resolution tools are granted to the resolution authority under the BRRD:

- The sale of business tool consists of the transfer to an independent third party of shares or of any assets, rights and liabilities of the financial institution, without consideration of legal and/or contractual impediments.
- The bridge institution tool consists of the transfer to a legal entity partially or fully owned by one or more public authorities of shares or of any assets, rights and liabilities of the financial institution, without consideration of legal and/or contractual impediments. The management is appointed by the resolution authority, which also approves the statutes, the strategy and the risk profile of the bridge institution.

- The asset separation tool consists of the transfer of any assets, rights and liabilities of the financial institution or a bridge institution to an asset management vehicle, which is a newly founded special purpose vehicle owned partially or entirely by one or more public authorities.
- The bail-in tool consists of the reduction or conversion to equity of the principal amount of claims or debt instruments and the writing-off of capital instruments.

As described above and in contrast to the other resolution tools, the bail-in tool can only be used where the financial institution is considered as a going-concern entity and is restructured. A further application of the bail-in tool is the transfer of assets and/or liabilities to a bridge institution. This is reaffirmed in the preamble of the BRRD: *“where the objective is to resolve the failing institution as a going concern if there is a realistic prospect that the institution’s viability may be restored, and where systemically important services are transferred to a bridge institution and the residual part of the institution ceases to operate and is wound up”*.

The general guidelines applicable to the ranking of creditors' claims, especially for the use of the bail-in tool, are laid down in Article 34(1) of BRRD, pursuant to which the following principles apply:

- the shareholders of the financial institution shall bear losses first;
- creditors shall bear losses after shareholders in accordance with the order of priority of their claims under normal insolvency proceedings; and
- creditors of the same class shall be treated in the same manner.

The hierarchy of Article 34 BRRD may be amended as part of a legislative package including amendments to the BRRD, to the SRM Regulation and to the Capital Requirements framework.¹⁶ The European Commission proposal aims at harmonising the bank insolvency creditor hierarchy concerning the senior unsecured debt eligible under the TLAC/MREL rules. Non-subordinated liabilities will have the same priority ranking in the national insolvency hierarchy as certain liabilities excluded from the application of the bail-in power. This modification would lead to the creation of a new creditors' class of non-preferred senior debt, which can be written-down or converted to equity after the capital instruments but before the other senior liabilities of the failing financial institution.

Specific claims are granted a legal privilege pursuant to Article 44 of the BRRD, as follows:

- covered deposits;
- secured liabilities (e.g. covered bonds);
- client assets and client money provided that such a client is protected under the applicable insolvency law;
- liabilities arising from fiduciary relationships;
- short-term liabilities with a maturity of less than seven days;
- salaries, pension benefits or other fixed remuneration of the employees;
- liabilities to tax and social authorities;
- deposit guarantee schemes; and
- liabilities to trade and commercial creditors providing goods or services that are critical to the daily functioning of its operations.

This privilege is granted in case of the application of the bail-in tool, which means that the above-mentioned claims will not be written off. Furthermore, some specific exceptions may apply to the use of the bail-in tool in exceptional circumstances, pursuant to Article 34(3) of the BRRD, as follows:

- it would be impossible to bail-in the liability within a reasonable time, notwithstanding the good faith efforts of the resolution authority;
- the exclusion is strictly necessary and proportionate to avoid widespread contagion;
- the exclusion of the liability is strictly necessary and is proportionate to achieve the continuity of critical functions and core business lines to maintain the ability of the institution under resolution to continue key operations, services and transactions; or
- the application of the bail-in tool to these liabilities would cause a destruction in value such that the losses borne by other creditors would be higher than if these liabilities were excluded from bail-in.

¹⁶ European Commission COM(2016) 852 final, 2016/0362 (COD).

The principle of ‘no creditor worse-off’ applies pursuant to Article 34(1) of BRRD as follows: “*no creditor shall incur greater losses than would have been incurred if the financial institution had been wound up under normal insolvency proceedings*”. A safeguard relating to the valuation of the creditors’ claims under a normal insolvency proceeding is provided by Article 74 of the BRRD, pursuant to which “*member states shall ensure that a valuation is carried out by an independent person as soon as possible after the resolution action(s) have been effected*”. The valuation method shall not take into account any extraordinary public support granted and shall determine the difference between the amount the creditor(s) would have received if the financial institution had entered into normal insolvency proceedings, and the amount received after the application of the resolution procedure.

Pursuant to Article 37 of the BRRD, the bail-in tool is used as a safeguard where the resolution authority has requested alternative financing sources to government stabilisation tools. The requesting of public financing sources is ruled in Articles 56-58 of the BRRD, and includes the following instruments:

- a public equity support tool, which consists of the participation of a member state in the recapitalization of the financial institution; and
- a temporary public ownership tool, which consists of the takeover of the financial institution by the member state until commercial and financial circumstances allow the transfer back to the private sector.

If public financing sources are used, a minimum contribution of 8% of the total liabilities including capital instruments of the financial institution through a write-down of debt and/or equity or debt conversion is mandatory. The value of this 8% is calculated at the time of the resolution measure based on Article 36 of the BRRD (i.e. through valuation by an independent expert).

No normal insolvency proceedings shall be opened or continued during the exercise of the resolution powers by the resolution authority. However, the BRRD does not exclude the application of corporate insolvency law to financial institutions. Normal insolvency proceedings can be applied in combination with the resolution tools of the BRRD. Such application is subject to the approval of the resolution authority.

Comparison and discussion

The DFA and the BRRD resolution frameworks present similarities and differences. The main similarity lies in the critical role given to public authorities in deciding upon the placement of SIFIs under resolution, in taking over control of the institutions, in exercising the powers previously allocated to management and shareholders, as well as in choosing the adequate resolution measures during the proceedings. These features are in line with the “Key Attributes of Effective Resolution Regimes for Financial Institutions” published by the Financial Stability Board in 2011, which is considered as the source document for the special resolution frameworks post crisis. Pursuant to Section 2 “Resolution Authority” of this document, “*each jurisdiction should have a designated administrative authority (...) responsible for exercising the resolution powers over firms within the scope of the resolution regime (...)*”.

Another similarity between the two frameworks is the non-consideration of contractual clauses and civil law rules that may represent a hurdle to the application of the resolution measures (for example, the transfer of creditors’ liabilities to a bridge financial institution is possible without the agreement of the parties to the contract).

These features show that, in both frameworks, the failure of a SIFI is considered a matter of general interest: in the DFA and in the BRRD resolution frameworks, the limitations to contractual freedom and to normal insolvency and civil law are justified by the concept of “financial stability”. This reflects the fundamental trade-off in banking resolution between the rule of law and the need to preserve financial stability.

It is worth noting, however, that the concept of financial stability is not defined in the resolution frameworks. Some indices are given in Article 2(1) of the BRRD, pursuant to which the definition of “critical functions” refers to the size, market share, external and internal interconnectedness, complexity or cross-border activities of a financial institution or a group. However, the concept of “financial stability” is not present in either the BRRD definition list or in Title 12 USC in Subchapter I (“Financial stability”) and Subchapter II (“Orderly liquidation authority”). With no operational definition (quantitative and qualitative) of what a threat to financial stability really is, the framework leaves much room for interpretation by national resolution authorities.

The scope of financial institutions covered by the resolution framework is similar in the US and in the EU. The BRRD definition of the scope is more formal, whereas the DFA definition also considers the importance of the financial activities in the loss and income statement to ensure that all kinds of institutions predominantly engaged in financial activities fall within the resolution framework, irrespective of their legal form. One difference is the non-application of the US resolution framework to insured depository institutions, which are resolved under the FDIC Act. As under the framework applicable to SIFIs, broad powers are granted to the FDIC to ensure the resolution of a failing insured depository institution. The activities of the institution shall be continued during the resolution proceedings to ensure an orderly winding-down.

The conditions for opening the resolution proceedings are also comparable in the US and EU resolution frameworks. Under the DFA, the general conditions consist of a threat to financial stability, economic inefficiencies of insolvency proceedings outside the resolution framework and the absence of private sector solution. Under the BRRD, the definition is more restrictive, as it refers to the concept of "public interest", which requires an analysis of the adequacy of the resolution framework to achieve the resolution objectives (including maintaining financial stability). The main difference between the two frameworks is that the prudential supervision authority decides upon the opening of the resolution procedure in the BRRD, whereas this decision belongs to the FDIC under the DFA. Furthermore, the BRRD also considers the request of extraordinary public support as an opening condition of the resolution proceedings. The individual conditions relating to the financial institution (e.g. illiquidity) are the same under both frameworks.

The resolution frameworks do not exclude the possibility of a bailout by the public sector, under specific conditions. Under the DFA framework, the financing of the resolution procedure may be performed indirectly based on debt issuance to the State Secretary, with a limit of 90% of the consolidated balance sheet of the financial institution. The decision to request public sector financing remains at the discretion of the resolution authority. In contrast, public sector financing under the BRRD is submitted to objective conditions. Furthermore, there is a difference between provisory public sector financing during a systemic crisis, which is of a precautionary nature only, and the use of public funds through the government stabilisation tool, which is submitted to a previous bail-in of 8% of the liabilities.

The resolution powers granted to the national resolution authorities are comparable under the two frameworks, except that the government stabilisation tools are broader under the BRRD. Under the DFA, direct participation in the capital of the financial institution and a temporary takeover of the financial institution through state are excluded.

There are also some important institutional and legal differences. In Europe, it is of course important to distinguish between the European Union (where the BRRD applies), the Banking Union (SSM and SRM) and the Eurozone. It makes more sense to compare the United States to the Banking Union or to the Eurozone than to the European Union.

At the institutional level, there are two main differences. The first is that there is no treasury in the Banking Union or the Eurozone, which implies that fiscal resources for resolution are more limited. The second difference is that there are several national insolvency laws, which makes it difficult to have a unique resolution process.

There are also several significant differences in the frameworks themselves. The DFA relies on a single point-of-entry strategy at the level of the holding company and allows an intervention at the subsidiary level in limited circumstances, whereas the BRRD also considers the multiple point-of-entry strategy, even if the conditions of resolution are not met for all the financial institutions of the group. Hence, the EU framework offers more flexibility in the resolution of international and complex financial groups.

Another important difference is that the DFA is limited to an orderly winding-down procedure, (i.e. a closed-book process). The BRRD resolution tools may be used to restructure or to liquidate the financial institution as a going-concern or as a gone-concern.

Some key elements of both the EU and US resolution frameworks could lead to economic inefficiencies. These elements are commented on separately below. We would like to emphasise here that each disposition of either resolution framework is the result of a trade-off from an economic perspective, which leads to the rejection of the most preferred alternative and to the corresponding opportunity costs.

First, the conditions for opening resolution proceedings leave the administration authorities with wide scope for interpretation. The conditions relating to the financial institution contain the expressions "in the near future" (BRRD) or "likely to be" (DFA), without specific quantitative elements (e.g. illiquidity in the next 30 days). Furthermore, the general conditions relating to the consequences of the failure of the financial institution refer to large concepts, for example: "*economic inefficiencies*", "*endanger the financial stability*", "*significant adverse*

effect on the financial system". Given that these concepts are also neither defined nor quantified, there is a lack of predictability relating to (i) the probability of the opening of resolution proceedings, and (ii) the time of the decision making. This situation may create legal uncertainty and is hard to quantify in the internal risk-management models of the private banking sector. However, in times of financial crisis in particular, the advantage of affording important playing room to administrative authorities is the creation of 'constructive ambiguity', i.e. the postponement of the resolution decision may lead to an improvement in the crisis management of the financial institution.

Second, neither resolution framework gives any specific roles and responsibilities to senior creditors – in contrast to corporate insolvency law, where senior creditors can influence the outcome of the restructuring of the liquidation plan. Resolution authorities have a discretionary role relating to the involvement of the management of the financial institution. The exclusion of the senior creditors and of the management from the procedure and the complete transfer of the decision power to a public administrative authority may lead to a lack of knowledge transfer in the resolution proceedings. This is especially the case where senior creditors are financial institutions with a comparable business model, i.e. they have greater skills in the financial sector than the administrative authorities. This can be explained, in particular, in the context of a banking resolution framework, which aims at preserving financial stability and not at ensuring maximisation of the value of the enterprise.

Third, the utilisation of the bail-in tool in the BRRD framework and the privilege granted to specific creditors in the liquidation procedure of the DFA also contain discretionary elements that cause legal uncertainty. In the DFA, the FDIC may decide that some claims will be excluded from the bail-in power based on economic considerations (i.e. maximisation of the value of the assets and/or minimisation of the losses incurred). Under the BRRD framework, the national resolution authorities may also exclude specific liabilities from the application of the bail-in if there is a risk of widespread contagion. As these criteria are large and can be broadly interpreted, the outcome of the procedure and the expected effect on the creditors' situation is hardly predictable. There is also the risk of powerful creditors putting the resolution authority under pressure when arguing that there are essential counterparties for the continuation of the procedure or that the reduction of their claims would create a systemic risk.

A further element of legal uncertainty arises from the discretionary right of the resolution authority to breach specific contractual clauses that represent an impediment to the exercise of the resolution powers. This creates unpredictability for the counterparties, as the resolution authority has discretionary power in the choice of the resolution tools. For example, in the case of the use of a bridge institution, the creditors are allocated to either a remaining institution in liquidation or to a restructured entity under public ownership. The transfer or non-transfer of the liabilities cannot be predicted at the time of opening of the insolvency proceedings. Creditors remaining with the resolved financial institution are protected by the application of the 'no creditor worse-off' principle, pursuant to which no creditor shall incur greater losses than they would have incurred if the financial institution had been wound up under normal insolvency proceedings. However, important differences may arise between the valuation of a claim under a going-concern (i.e. the bridge institution) and a gone-concern perspective (i.e. the remaining part of the institution being wound up). This is especially the case for the balance sheets of banks, which are sensitive to the scheduled time to monetisation considered in the valuation of the assets.¹⁷

Fourth, the US and the EU resolution frameworks do not prevent bailouts causing material costs to the public sector. Under the BRRD, state support outside of the resolution framework is possible if it qualifies as a "precautionary measure". Furthermore, a public takeover or a recapitalisation of the failing financial institution is allowed after a limited reduction of 8% of the creditors' liabilities. In the DFA framework, the public sector may refinance 90% of the assets of the failing financial institution through debt issuance. This indirect form of financing represents a material risk for the state and offers little transparency.

The US resolution framework also presents some specific critical points that may lead to economic inefficiencies. First, the only outcome possible for the resolution proceedings under the DFA is the liquidation of the financial institution; there is no possibility to restructure a viable financial institution. Furthermore, the choice of an SPE

¹⁷ Refer also to the EBA Consultation paper from 7 November 2014 No. CP/2914/38, S. 7: "the ex-post valuation seeks to ensure that shareholders and creditors do not receive worse treatment under resolution than what would be expected in a counterfactual liquidation under normal insolvency proceedings. Accordingly, in this case the assumptions governing the estimation of the treatment shareholders or creditors would have received in insolvency are driven by the sole purpose of determining the appropriate discounted amount of cash flows that can reasonably be expected under the relevant national insolvency procedures".

resolution strategy at the holding company level may not be sufficient to ensure an orderly winding-down and the refinancing of the whole group in a crisis situation.

Some specific issues should also be mentioned in relation to the implementation of the EU resolution framework:

- **The transition phase of the BRRD.** The BRRD has applied since 1 January 2016, i.e. since this date it has been mandatory to bail in shareholders and creditors for a minimum of 8% of total liabilities before public funds are granted to a financial institution under resolution. The BRRD applies to junior and senior bonds issued before 1 January 2016. This led to issues in the implementation phase of the BRRD, given that the resolution of several banks in the EU was triggered before 31 December 2015 (European Parliament, 2016). As an example, the Bank of Portugal decided to transfer back some senior bonds of Banco Espírito Santo from the bridge institution, Novo Banco, to the 'bad bank' in an application of Article 40, Section 7 of the BRRD. This transfer was performed to ensure that the losses of Banco Espírito Santo were not absorbed by the taxpayers. The retroactive application of the bail-in power for certain senior bonds led to protests from the concerned creditors.
- **The implementation gap between BRRD bail-in and MREL/TLAC.** The bail-in tool from the BRRD was applied with immediate effect from January 2016. However, the loss-absorbing capacity in the Banking Union will be implemented with the MREL/TLAC requirements in 2019. There is therefore a gap between the capacity of the financial regulator to bail in the liabilities of financial institutions and the existing bail-inable liabilities on banks' balance sheets. Another issue is that there is currently no market in Europe where the bonds of banks in resolution could trade.
- **The state aid framework.** Since the financial crisis, governments have provided various types of support to their financial sectors under the state aid framework. The recent case of Monte Dei Paschi shows that the dispositions of Article 34 of the BRRD relating to precautionary recapitalisation can be interpreted in a broad manner – even in the absence of financial instability. While some discretion is useful, there is a danger that too much discretion can undermine the credibility of the SRM.

We now turn to a discussion of the empirical evidence.

Part 2: Evidence and case studies

In this section, we discuss some evidence on US living wills and several case studies of EU banks and countries.

Some evidence on the impact of 'living wills'

Recovery and resolution plans are an important part of the new framework. Since they began earlier in the United States, we discuss first what one can learn from the US experience with living wills.

In the United States, there has been some simplification of banks' structure, although there is a debate about the role of living wills in this process. Bright et al. (2016) use the public portions of resolution plans submitted by every bank holding company (BHC) with more than \$50 billion in assets. Their analysis is based on data from 2013 and 2014. They argue that banks have not significantly reduced their complexity, and that a 'living will' must describe critical operations, core business lines and material legal entities. The number of critical operations (e.g. 'clearing') is small and does not vary much over time, as one would expect. The total number of legal entities, however, has declined from 2013 to 2015 in all the global systemically important banks (G-SIBs).

Ryan (2016) argues that there is evidence of a real change in banks' legal entity structures as a result of the living will process. In the 2015 submission, four of the five plans were rejected because of deficiencies in legal entity rationalisation. By October 2016, banks had eliminated redundant entities and some subsidiaries that used to be directly held by the holding company are now held by an operating subsidiary to facilitate resolution, especially in an SPE approach. The banks have also improved the identification of critical services that are shared across their organisations, and have proposed solutions to ensure continuity of these services.

Nicola Cetorelli has gathered comprehensive data on the legal and organisational footprint of US bank holding companies.¹⁸ One measure is based on the number of subsidiaries of BHCs (Figure 1), another is based on the footprint across industry classification codes (Figure 2).

Figure 1 shows the evolution of the entry and exit of subsidiaries. Entry (exit) counts the number of subsidiaries that appear (leave) for the first time in a given quarter. Note that these are not necessarily 'created' or 'closed' because entry may be the result of a true *de novo* creation, or of an acquisition from a non-BHC firm. Likewise, exit may be the result of an actual closing, or of sales outside of the BHC space.

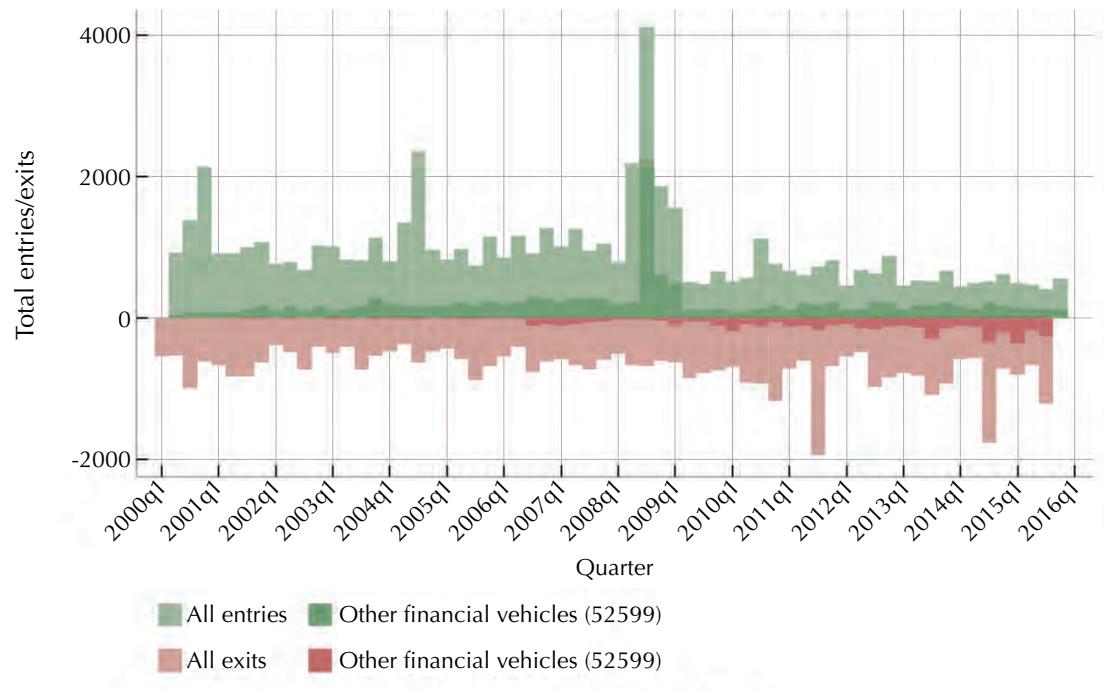
Figure 2 shows the evolution of the sectoral footprint of US BHCs. "Adoptions" capture the first time we observe a given North America Industry Classification (NAICS) code in a BHC. So, for example, if Bank X adds three different NAICS for the first time in quarter t and Bank Y adds two, then we would report five adoptions. "Exits" measures the opposite.

We see that BHCs greatly increase their complexity throughout the 2000s, with entry outpacing exit both for the number of subsidiaries and the dispersion across sectors. The trends reversed after the crisis. The big spike in 2008q3 is due to the entry in the BHC population itself of Goldman Sachs and Morgan Stanley.

One obvious question is whether the decline due to the crisis itself, or in part to new regulations. NAICS code 52599 is particularly interesting because it includes special purpose vehicles (SPVs) that are most likely to be created for securitisation purposes. The crisis had a drastic impact on securitisation, and we can see a clear drop in the 52599 category. However, we also see a decline outside this category, which suggests that new regulations also play a role.

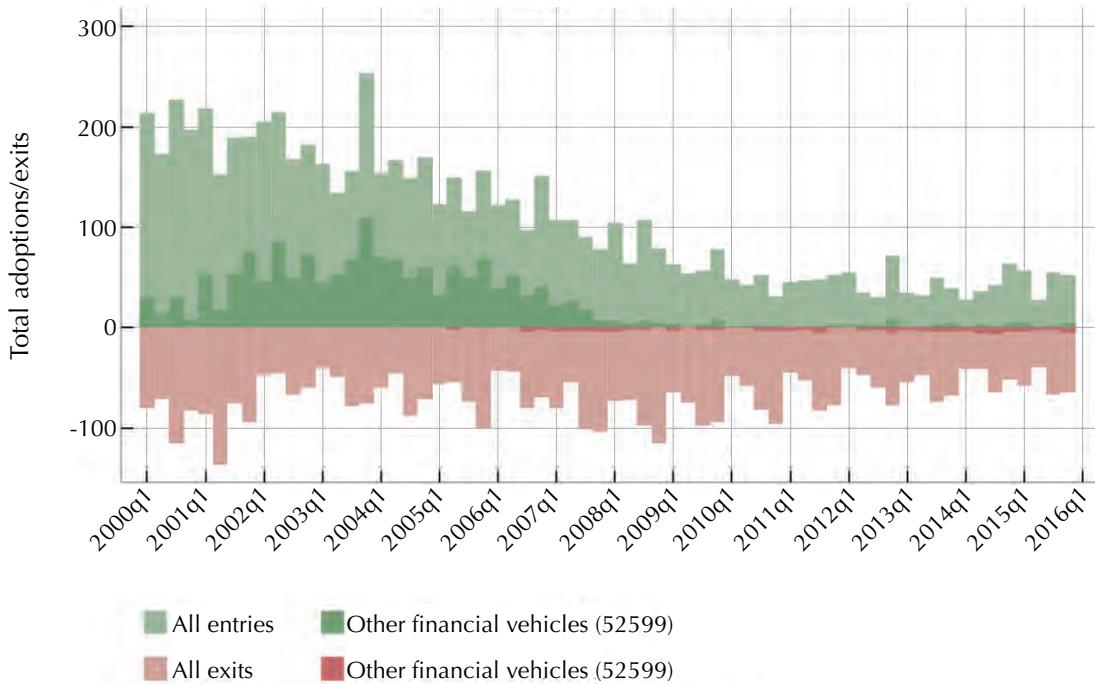
Schoenmaker (2016) discusses the legal and operational structure of Eurozone banks. There is also some evidence that European banks are modifying their operational structure to improve their resolution plans (see, for instance, Santander's 2015 Annual Report).

¹⁸ For earlier work on the topic, see Cetorelli and Goldberg (2016).

Figure 1 Entry and exit of subsidiaries of US bank holding companies

Notes: An entry (exit) occurs when a BHC holds a subsidiary for the first (final) quarter.

Source: FR Y-10, authors' calculations.

Figure 2 Evolution of the sectoral footprint of US bank holding companies

Notes: An adoption (exit) occurs when a BHC holds (does not hold) a NAICS for the first time.

Source: FR Y-10, authors' calculations.

Takeaway

Living wills are useful, and most of the critiques we have read about them miss the point. Of course real crises always differ from anticipated ones, and nobody seriously thinks that living wills provide an exhaustive templates. But uncertainty actually *increases* the value of planning ahead, not the other way around.

The other point that most people seem to miss is that living wills are a dynamic process, where learning-by-doing plays a key role. The fact that the first vintages of living wills stretched credulity says essentially nothing about their eventual usefulness.

Implementing recovery and resolution plans is complex and time consuming, but the early signs are encouraging and the process should be continued and reinforced.

Case studies of some European banks

In this section, we review the outcomes of several banking crises in Europe. We emphasise the size of the losses and the extent of burden-sharing between taxpayers and private investors. The starting points of the analysis are total assets, impaired assets and expected loss rates, and on the liability side, equity, bail-inable debt and non-bail-inable debt.¹⁹

Let us use a simple example to illustrate the important. Consider a bank of size 100 (total assets). Suppose that the capital requirement is 7% of RWA and that $RWA/A = 0.5$. For simplicity, we will express the requirement as 3.5% of total assets. At the moment, the bank is well capitalised since $5\% > 3.5\%$.

Table 1 Example of a bank balance sheet

Total assets	100	Total liabilities	100
Loans	90	Equity	5
Securities	10	Junior debt	5
		Senior debt	5
		Deposits	85

A small loss

Suppose there is a loss of 2% of assets. Equity then drops to 3%, which violates the requirement. The bank can try to issue equity to go back to a 5% ratio. Alternatively, the junior debt can be bailed-in. Junior debt is bailed-in with a haircut of 2/5, and converted into two units of equity. Junior debt holders now own 3 units of debt and 2 units of equity. The initial shareholders bear the losses of 2 and now only own 3. Existing losses are borne by the original shareholders, and the bail-in is only used to maintain adequate capital ratios.

Table 2 Example of a bank balance sheet after losses

Total assets	98	Total liabilities	98
Loans	$90-2=88$	Equity	$5-2+2=5$
Securities	10	Junior debt	$5-2=3$
		Senior debt	5
		Deposits	85

¹⁹ Future requirements will be set by TLAC/MREL regulations. For instance, TLAC includes instruments that can be written down or converted into equity in case of resolution: capital instruments (CET1, AdT1 and T2), together with long-term unsecured debt – subordinated and senior debt. Debt must be unsecured; have a minimum residual maturity of more than one year; arise through a contract; and be subordinated to liabilities that are explicitly excluded from TLAC. The TLAC requirement will be 16% of group RWA in 2019, increasing to 18% in 2022.

A large loss

Suppose now that the loss is 6% of assets. The original shareholders are wiped out. The junior debt holders lose 1 and the remainder (4) is fully converted into equity. To maintain the appropriate equity ratio, 1 unit of senior debt is bailed-in as well. At the end of the process, former junior creditors own 4/5 of the equity, and senior creditors 1/5 of equity plus 4 units of senior debt.

Table 3 Example of a bank balance sheet after larger losses

Total assets	94	Total liabilities	94
Loans	90-6=84	Equity	5-5+4+1=5
Securities	10	Junior debt	5-1-4=0
		Senior debt	5-1=4
		Deposits	85

Finally, if losses exceed 15% of assets, then either the depositors face a haircut or, if they are covered, the deposit guarantee system pays the difference.

Measurement issues

Consider the last example, with a loss of 6%. There is a *theoretical* distinction between losses (in red) and equity swaps (in green). In the example above, senior debt holders do not lose money in market value terms because their equity claim is worth 1.

Empirically, however, we are unlikely to be able to make such a clear distinction. The difficulty is in estimating the losses, as there are two approaches that lead to different estimates. We can try to estimate directly the losses on the asset side, but the losses are realised slowly over time so we cannot get an accurate measure. The alternative is to estimate the write-downs on the liability side, plus the bailout from the government, i.e. a measure of red and green together on the liability side.

Overview of banks considered

Table 4 presents an overview of the cases considered. It presents the banks' balance sheets immediately prior to the year of the restructuring (ie. initial assets, initial common equity, initial junior debt and initial senior debt).

Table 4 Balance sheets of banks studied

Name	Period	Assets (A)	CE/A	JD/A	SD/A	3Y Imp
Dexia 1	2008	604,600	2.41%	0.81%	33.74%	1.0%
Amagerbanken	2008-2011	4,169	7.46%	4.34%	5.59%	7.3%
Anglo-Irish	2008-2010	96,652	4.21%	5.46%	24.41%	36.4%
Hypo Real Estate	2008-2010	400,174	1.52%	1.40%	54.50%	1.0%
Dexia 2	2011-2012	566,735	3.39%	0.69%	37.14%	1.7%
Bankia	2012	298,367	3.85%	0.11%	15.96%	6.6%
SNS Reaal Group	2013	133,663	1.72%	1.30%	16.62%	1.6%
Laiki	2013	31,364	0.82%	0.42%	1.53%	.
Alpha Bank	2013	58,357	1.05%	0.43%	0.81%	7.5%
Average			2.94%	1.66%	21.14%	7.88%

Note: Assets in millions of euros. Ratios measured last year before crisis. CE = common equity; JD = junior debt; SD = senior unsecured debt, excluding all deposits. 3Y imp is the three-year cumulative impairment rate. We could not calculate this number for Laiki.

We calculated the losses due to impairments on customer loans, interest income and operating income. Using various sources, we also tracked the distribution of losses across equity holders, junior debt holders and senior debt holders.

Lastly, using various academic and policy documents, we tracked the public capital injections and guarantees at face value. The credit default swap (CDS) spreads are a measure for the losses anticipated by the market. The sources of the data are detailed in the Appendix at the end of this chapter.

The table shows that the average three-year asset loss rate is just under 8%, but it varies enormously across banks. It is higher than the equity ratio, which is just below 3%, but typically less than the sum of equity, junior and senior debt together, except in the case of Laiki and perhaps Anglo-Irish.

We now briefly describe each individual case, before providing a summary.

Amagerbanken

Amagerbanken was involved mainly in retail and corporate banking. The bank's troubles began in 2007, following the downturn in the Danish real estate market. In December 2009, the Danish government provided a capital injection in the form of hybrid capital of \$213 million.²⁰ Later, in July 2010, the bank received \$2,600 million in state guarantees. Nevertheless, by the end of 2010, an internal review led to large write-offs and negative equity. On 4 February 2011, the bank was no longer solvent and the Danish bank regulator closed it. Some of its assets were transferred to a new ('bad') bank, which is owned and administered by the state company Finansiel Stabilitet.²¹

According to the transfer scheme,²² equity and subordinated liabilities were not transferred to the new bank and were fully wiped out. As for non-subordinated liabilities, guaranteed bonds and deposits will not suffer any loss, while unguaranteed bonds will provisionally suffer a 58.8% haircut (final haircut subject to the ultimate value of the assets). Amagerbanken held €268 million in unguaranteed bonds, and €2,920 million in guaranteed bonds, loans and deposits.

In 2007, before the emergence of the crisis, Amagerbanken's total assets amount to €4,169 million. Impairment charges over the next two years (no reports were issued for the fiscal year 2010) are €305 million, for a loss rate of 7.4%. Alternatively, one could calculate the bail-in of subordinated debt (€181 million in 2007, which is completely wiped out), a capital injection of €148 million and unguaranteed bonds, which initially suffer a €158 million haircut (58.8% of €268 million). The total capital need is €493 million, or 11.5% of assets.

We calculate the private sector involvement (PSI) of creditors, equal to creditor losses (€339 million) divided by creditors losses plus cost to taxpayers (€148 million). This gives a PSI close to 70%. However, more recent numbers suggest the PSI is much lower. First, the haircut for senior unguaranteed debt was 14% (compared with an initial estimation of 58.8%).²³ Second, cost to taxpayers is higher: €277 million of the state guarantee was eventually a loss. On top of that, at the time of the transfer to Finansiel Stabilitet, it provided an equity injection of €161 million to the new bank, and additional €203 million was injected as share capital into Amagerbanken (Faia and Weder di Mauro, 2015). Along with the €148 million capital injection of 2009, the total cost to taxpayers is then €788 million.²⁴ Thus, the PSI is only 22%.

Dexia

Dexia Group was formed in 1996 through a merger of Belgian, Luxemburg and French local government finance banks. At its peak in 2008, it held €650 billion in assets. During the period 2007 to 2012, its balance sheet was severely and repeatedly damaged by the US subprime crisis and rising refinancing costs, coupled with mismatches and unsustainably low loan margins.

Annual losses accumulated in large volumes of negative reserves that had to be covered by two public recapitalisations – in 2008 and in 2012 – by the governments of Belgium, Luxemburg and France. The bailout in 2012 of €5.5 billion, for example, was largely provided by Belgium (€2.9 billion) and France (€2.6 billion). In

²⁰ "Amagerbanken enters into agreement on state-funded capital injection", *Nasdaq GlobeNewswire*, 18 December 2009. Figures here are reported in US dollars, at an exchange rate of 5.19 Danish krone to the dollar (source: exchangers.org.uk).

²¹ "Denmark seizes Amagerbanken", *The Wall Street Journal*, 7 February 2011; "AMAGERBANKEN - \$2.8 Billion Bank Failure In Denmark: Senior Bondholders Whacked 41%", *The Daily Bail*, 7 February 2011.

²² See pages 1-3 of the European Commission report at http://ec.europa.eu/competition/state_aid/cases/240068/240068_1232900_110_2.pdf.

²³ See <http://danskebank.com/da-dk/ir/Documents/Presentations/2012/201203-Danish-Support-Packages.pdf>.

²⁴ Using the exchange rate as of 31 December 2009 of 0.69.

addition to the recapitalisations, in October 2008 and 2011 Dexia's new unsecured bond issues and interbank deposits had to be backed by public guarantees (of €100 billion and €90 billion, respectively) since Dexia had lost market access.

Table 5 Timeline for Dexia

Crisis year	Event	Public recapitalisation	Implicit recapitalisation	Losses on asset side (shareholders)	Shareholders money	Assets to be wound down
2008	Government recapitalisation and public guarantee programme (€100 billion)	€6.35 billion	€17 billion in asset guarantees, of which €3.2 billion as state aid	€5 billion	€5 billion	€350 billion
2011	Public guarantee (€90 billion)					
2012	Public recapitalisation	€5.5 billion			€4.5 billion haircut	€385 billion worth of liabilities

Private share investors did not participate in the capital increase, but got heavily diluted. Public shareholders also lost out from book value reductions as a result of the two restructuring events. Private investors held 26.9% of the stock in 2008, and 4.5% in 2012.

Anglo-Irish bank

Anglo-Irish Bank grew during the Irish real estate boom years to become the third-largest domestic banking institution in Ireland. However, by the autumn of 2007, Irish property prices had started to decline. Amid growing mistrust of the bank's accounting practices, a €1.5 billion recapitalisation was announced in December 2008 (although ultimately this was not realised). In January 2009, the bank was nationalised.

The full picture of the bank's financial situation was revealed on 31 March 2010, when it reported its results for the 15 months to December 2009. Losses for the period were €12.7 billion, with an operating profit before impairment of €2.4 billion and impairment charges of €15.1 billion driving the overall result. Total assets declined from €101.3 billion in September 2008 to €85.2 billion at the end of 2009. The 2010 losses were even larger – €7.7 billion impairment charges, and a €11.5 billion loss on disposal of assets to the National Asset Management Agency (NAMA). The three-year cumulative impairment charges for the period 2008-2010 were €35.1 billion.

Between June and September 2009, the Finance Ministry provided €4 billion. On 31 March 2010, the European Commission allowed the Irish government to grant the bank up to €10.44 billion (of which €10.3 billion was effectively granted). On 10 August 2010, the Commission allowed the Irish government to temporarily grant the bank a further €10.054 billion (of which €8.58 billion was effectively granted). And on 21 December 2010, the Commission allowed the Irish Government to inject another €4.964 billion into the bank (at this time, the remaining €1.474 billion of the capital injection approved on 10 August 2010 was also injected).

In addition, Anglo benefited from a 2008 state guarantee on its liabilities. The guarantee scheme covered all deposits, and certain other liabilities – inter-bank deposits, senior unsecured debt, asset covered securities and dated subordinated debt, for a two-year period.

Bankia

In December 2010, seven Spanish regional banks were merged to create Bankia, Spain's third largest bank and largest real estate lender. In May 2012, Bankia revised its earnings statement for 2011 to reveal a loss of €3 billion. The financial reports for the first half of 2012 revealed an additional loss of €4.5 billion. Subsequently, in June 2012 Bankia was bailed out by the Spanish government, which converted its preference shares into equity. In the following years, additional capital injections were conducted, with the total capital injection into Bankia standing at approximately \$36,493 million (€28,683 million).²⁵

In July 2012, a Memorandum of Understanding was signed between Spain and the Eurozone countries, with respect to four Spanish banks, including Bankia. These banks came under the control of the Spanish Fund for Orderly Bank Restructuring (FROB). In November 2012, the European Commission approved Bankia's restructuring plans. Under the plan, impaired and real estate-related assets would be transferred to an asset management company, while non-senior debtholders would be subject to haircuts.

Private shareholders held approximately 50% of Bankia, and were offered a ratio of 1/200 (a 99.5% haircut). Equity in 2011, before the crisis, was €11.497 billion (based on Bankia's published reports).

Hypo Real Estate

In 2003, Hypo Real Estate (HRE) emerged as a spin-off from HypoVereinsbank, a German bank focused on real estate. In 2007, HRE acquired Depfa, an Ireland-based public finance company. The latter accumulated significant losses, and on September 2008, the German banking association provided €35 billion of liquidity to HRE, backed by a state guarantee. Additional state guarantees were later granted to HRE.

In March and June 2009, the government paid €3 billion to gain 90% control of the bank. In the following October, the remaining shareholders were squeezed out at €1.3 per share. Additional capital injections were made in October 2009, November 2009 and April 2010. In total, Germany has provided HRE with capital injections of approximately €9.95 billion and guarantees of €145 billion.

Finally, in September 2010, non-performing and non-strategic assets were transferred to FMS-WM, a government-backed vehicle. The transferred portfolio had a book value of €165 billion.²⁶ HRE also had some obscure Tier 2 instruments called *Genussrechte* which, for reasons explained in Dübel (2013), were partly bailed-in even though the Tier 1 instruments could not receive haircuts outside bankruptcy. The sums involved are small, so this quirk does not change the big picture, but it underlies the arbitrary and unpredictable nature of bail-in before the BRRD. If one is looking for a textbook case of how not to implement a bail-in, then HRE would be a strong contender.

SNS Reaal Group

SNS Reaal Group is a Dutch banking and insurance group. It had to undergo a government equity injection in 2008 and a nationalisation in 2013 due to significant exposure to both domestic and international commercial real estate.

Based on the pro-forma consolidated balance sheet reported, the total capital gap of SNS Reaal that was plugged in February 2013 can be put at €1.8 billion in capital losses attributed to the property finance arm (realised during the first half of 2013) and €2.5 billion in capital needs, after deducting existing shareholder capital, required to meet minimum regulatory requirements of the residual group (as well as its own contribution to the €1 billion levy).

A total of €2.1 billion in hybrid capital and subordinated debt have been deposited as share premiums or expropriated, leaving the government and Dutch banks to fund €2.2 billion of the recapitalisation. If one adds the government's share in the hybrid capital of €565 million, the official sector involvement (government and Dutch banks) becomes €2.8 billion. This is 58% of the total of the private and public creditor contribution, excluding shareholders.

25 See pages 7-8 of the European Commission report at http://ec.europa.eu/competition/state_aid/cases/246568/246568_1406507_239_4.pdf.

26 See the European Commission report at http://ec.europa.eu/competition/publications/cpn/2011_3_9_en.pdf.

Table 6 Timeline for SNS Reaal Group

Crisis year	Event	Public recapitalisation	Implicit recapitalisation	Investor writedowns	Shareholders money	Comments
2008	First government equity injection	€750 million capital increase from the Dutch state in the form of hybrid capital securities				
2013	State control and ownership	€2.2-2.8 billion share capital injection by government	€420 million buyback transaction	Bore most of the loss burden	€72 million, or a 17% average haircut	Shares as well as hybrid capital and subordinated debt of the bank were nationalised

Source: Dubel (2013).

Laiki

Cyprus Popular Bank (also known as Laiki) was the second largest banking group in Cyprus behind the Bank of Cyprus, with total assets of €43 billion at its peak in 2010 and €30 billion at the time of last reporting (September 2012). Rising non-performing loans from the Greek economic crisis and a house price bubble, combined with dubious provisioning policies, prompted large recapitalisation needs.

After long and heated discussions over the extent of creditor participation, accompanied by large deposit outflows, Laiki was resolved in March 2013. The bank was capitalised through the full contribution (bail-in) of the shareholders and bondholders of the bank and through the conversion of 47.5% of uninsured deposits (over €100,000) into equity. The resolution of Laiki minimised the use of taxpayers' money, with a full bail-in of equity shareholders and bondholders and a partial bail-in of uninsured depositors. All deposits under €100,000 were fully protected.

As a result, Laiki was split into two units. While all uninsured deposits were kept in a legacy unit (Legacy Laiki), the insured deposits were transferred, together with certain assets and liabilities, to the Bank of Cyprus. In exchange for the positive net asset position transferred, Legacy Laiki received shares in the Bank of Cyprus. The uninsured depositors of Laiki were to be compensated through the liquidation of the assets of Legacy Laiki, which also includes these shares in the Bank of Cyprus.

Table 7 shows who bore the losses during the event.²⁷

Table 7 Timeline for Laiki

Crisis year	Event	Senior debt losses	Deposit losses	LME	Shareholders money	Comments
2008	Largest bail-in ever recorded, where 47.5% of eligible deposits, that is those larger than €100,000, were converted to equity	€337 million in senior bonds	€7 billion, 47.5% of eligible deposits converted to equity	€277 million	€1.8 billion in recapitalisation through the Cyprus sovereign associated with a capital decrease for existing shareholders	Bailed-in depositors hold around 81% of the bank's share capital, while the outstanding ordinary shares as of 29 March 2013 and the ordinary shares arising from the conversion of outstanding debt securities as of 29 March 2013 now account for less than 1% of the share capital of the bank

Source: Dubel (2013) and Demetriades (2016).

27 For more information, see Dübel (2013, pp. 43-51), Demetriades (2016) and www.esm.europa.eu/sites/default/files/faq-financialassistanceforcyprus.pdf.

Alpha Bank

Alpha Bank grew spectacularly during the 2000s, with total assets increasing sevenfold between 2001 and 2009.

However, in 2011 it suffered a major hit from Greek government bond write-downs, as well as increasing defaults on domestic loan exposures. Relative to the capital base, the Greek government bond hit was milder than in the case of other Greek banks, given that the capital base had just been strengthened.

Even so, the €4.8 billion PSI loss wiped out the entire capital. Alpha Bank was also hit somewhat less by the Greek economic crisis than other banks, although much of this was due to the quasi-automatic bailout provided by the ECB through low reference interest rates.

Alpha Bank was given a classical taxpayer-funded bailout through direct government recapitalisation. Creditor participation was not mandated and liability management remained voluntary. The 'restructuring' remained limited to measures affecting existing shareholders and raising fresh share capital.

Table 8 Timeline for Alpha Bank

Crisis year	Event	Public recapitalisation	Senior debt losses	Investor writedowns	Comments
2013	Classical taxpayer-funded bailout through direct government recapitalisation	€4.6 billion initially, and had additional €1.6 billion available on a 'standby' basis under the greek banking programme.	€400 million	1.944456 new shares for every existing one	According to investor relations documentation, despite large GGB writedowns in December 2011, in February 2012 Alpha Bank repurchased €646 million in securities for €313 million in cash

Summary of the case studies

Let us now summarise what we can learn from the cases presented above. The first point is that all these estimates are surrounded by a large amount of uncertainty. Even with the benefit of hindsight, it is difficult to figure out exactly how large the losses are, and how they are shared among the shareholders, the various creditors and the taxpayers.

We have tried to take into account asset and debt guarantees in our calculations. The face values are summarised in the Table 9.

Table 9 Summary of public interventions (millions of euros)

	Public capital injections	Asset guarantees	Debt guarantees
Dexia 1	6,400	17,000	100,000
Amagerbanken	148	-	1,800
Anglo-Irish	29,318	-	42,681
Hypo Real Estate	9,950	-	145,000
Dexia 2	5,500	-	90,000
Bankia	18,000	-	53,963
SNS Reaal Group	2,800	-	-
Laiki	-	-	-
Alpha Bank	4,600	-	-

Note: Assets and debt guarantees at face value.

We then use the CDS spreads of the banks to (approximately) translate the gross face values of the guarantees into net market values. We consider these guarantees to be part of the public bailout. Table 10 summarises the key ratios.

Table 10 Haircuts and burden sharing

Name	Equity loss	Junior debt loss	Senior debt loss	Public recapitalisation	Guarantee value	Recapitalisation need	PSI
Dexia 1	-73%	0%	0%	1.1%	2.0%	4.8%	10%
Amagerbanken	-100%	-100%	-68%	3.5%	10.0%	29.1%	54%
Anglo-Irish	-100%	-78%	0%	30.3%	9.6%	48.4%	17%
Hypo Real Estate	-95%	-12%	0%	2.5%	8.6%	12.6%	13%
Dexia 2	-96%	0%	0%	1.0%	3.8%	8.0%	11%
Bankia	-100%	-20%	0%	6.0%	4.2%	14.1%	14%
SNS Reaal	-100%	-100%	0%	2.1%	0.0%	5.1%	59%
Laiki	-100%	-100%	-60%	0.0%	0.0%	24.5%	100%
Alpha Bank	-52%	-66%	0%	7.9%	0.0%	9.9%	20%
Average	-91%	-53%	-14%	6.0%	4.2%	17.4%	33%

Note: The first three columns show the haircut rates for equity, junior debt and senior debt. The next three columns are scaled by assets. Public recap is the sum of all the capital injections by the public authorities. For assets and debt guarantees, we start from the face value. We then use the CDS spread of the bank at that time. We assume that it pays 200 basis points for the insurance, and that the insurance lasts for three years. When CDS spreads are not available we input the average in our sample, which is 969 basis points. The total recapitalisation need is the sum of the recapitalisation, guarantees, and the losses by private investors (shareholders, junior and senior debt holders, and, in the case of Laiki, depositors). For Bankia, we take the public recapitalisation to be €18 billion, as in Dubel (2013) and World Bank (2016b), although we note that one could also include previous public capital injections (see Appendix). PSI is the ratio of private haircuts, including shareholders, over total recapitalisation needs, including the value of government guarantees.

Recall from Table 4 that the average impairment rate is around 8% of assets. The average total recapitalisation need is around 17.4% of assets. We define PSI as the contribution of private investors, including shareholders, to the total recapitalisation of the bank. With this definition, the average PSI rate is 33%, albeit with large variations. If we exclude Laiki, this drops to 24%. Broadly speaking, we can say that taxpayers provided roughly three quarters of the total recapitalisation needs, and investors (including shareholders) only one quarter. The worst offenders are clearly Dexia and Hypo Real Estate.

Table 11 Examples of PSI

Assumed private participation	8%	12%
Counterfactual PSI	64%	77%

One of the goals of the BRRD is to lower the cost of bailouts for taxpayers. As a back-of-the-envelope calculation, we can estimate what the PSI would have been under the assumption that investors participate at least up to 8% of assets (this is for illustration purposes and is not meant to capture the actual BRRD rules). If we had managed to impose up to an 8% loss on private investors, the PSI would have been 64%, almost double the actual level. If we go up to a 12% loss, then the average counterfactual PSI increases to 77%. We conclude that bail-in can make a very significant contribution to protecting public finances.

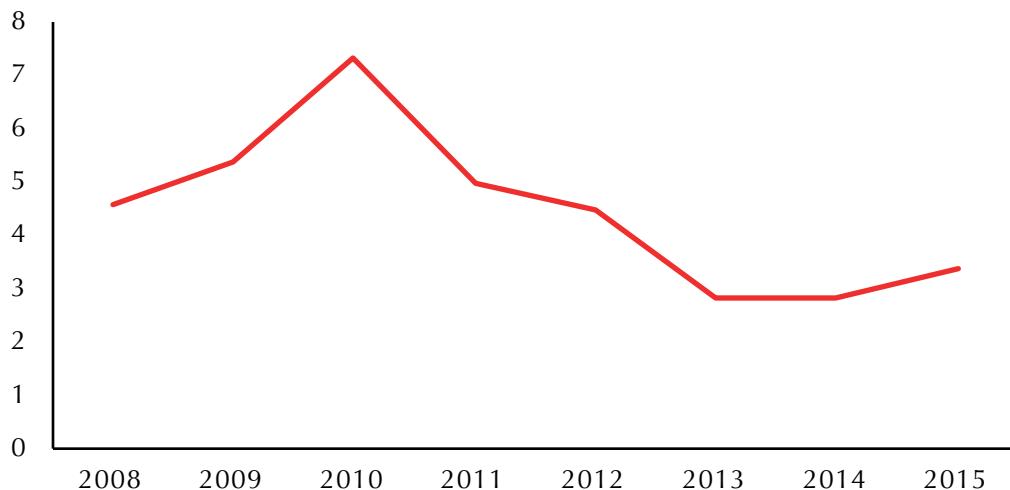
Cyprus: Bail-in and capital controls

The bail-in of large depositors at Cypriot banks was a dramatic episode in the Eurozone crisis. It is useful to study what has happened to Cyprus since then.²⁸

2004-2012: Build-up of systemic risk

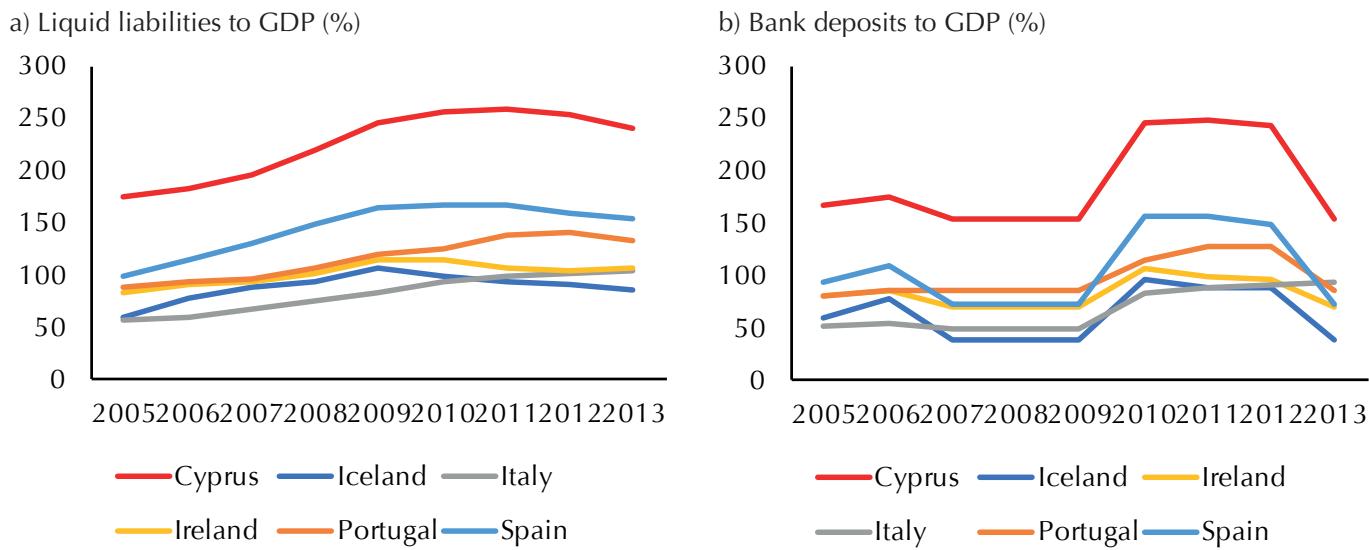
Cyprus joined the European Union in 2004 and the Eurozone in 2008. The euphoria that followed the EU accession, the relatively corrupt Cypriot regulatory framework and the country's status as a European tax haven were largely responsible for a massive influx of foreign capital into the country's banks and property market, in particular from wealthy Russians who wanted to safeguard their money. As a result, the banking industry grew until its assets reached 7.5 times GDP in 2010, the highest ratio in the EU (see Figure 3).

Figure 3 Domestic bank assets over GDP



Source: ECB, statistical data warehouse.

Figure 4 Liquid liabilities and bank deposits to GDP



Source: globalbanking.org

28 Demetriades (2016) touches on the political economy of the crisis from the perspective of the governor of the Central Bank of Cyprus at the time.

Between 2008 and 2013, the total capital of the domestic banking sector increased from €1.52 billion to €4.9 billion. The ratios of deposits and liquid liabilities to GDP were the highest in Europe (see Figure 4) as an increasing number of Russian companies registered in Cyprus.

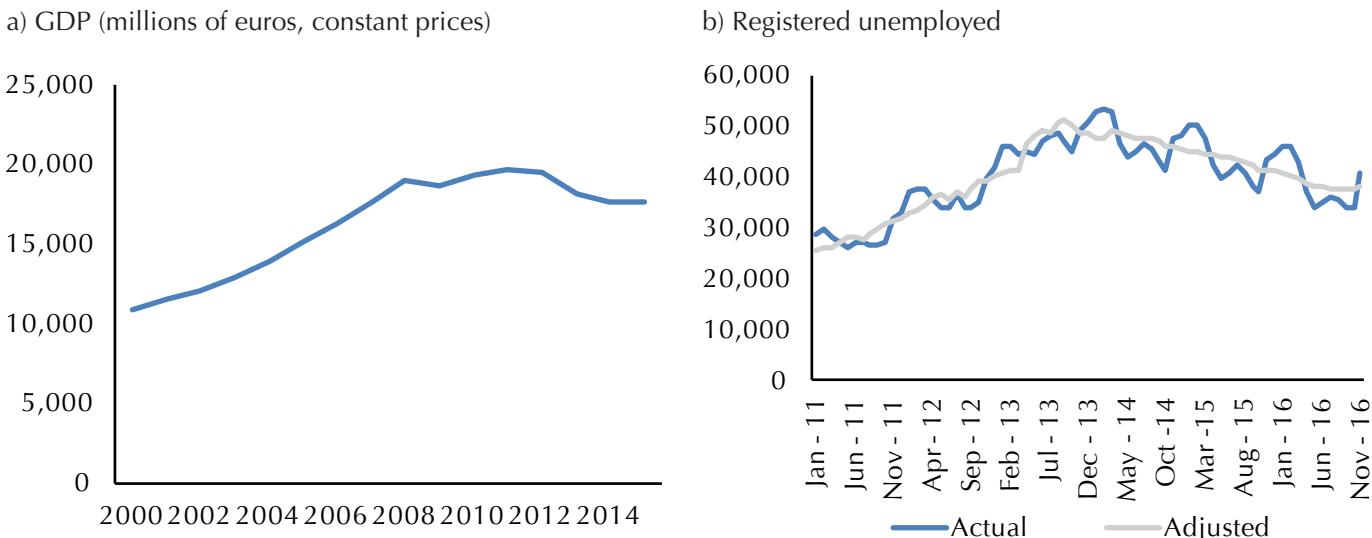
The bail-in

In 2012, high risk exposures to Greece and an accumulation of non-performing loans led the two largest lenders – Laiki and Bank of Cyprus (with approximately four times GDP in assets) – to request state aid. The Cypriot government, with no access to international financial markets and denied a loan from Russia, applied for an unpopular EU/IMF bailout that would enable it to recapitalise the banking system and restore its public finances.

The implementation of the bail-in in March 2013 was chaotic. The first, short-lived agreement (16 March) called for a tax of 6.75% on *all* deposits below €100,000 and 9.99% above €100,000. This agreement was a textbook example of what *not* to do. It applied to all deposits, not just those of the failed banks, and it implied a haircut on deposits below €100,000. The agreement was eventually scrapped and replaced by a more sensible one, but the damage was already done. The final deposit levy on Cypriot accounts was 47.5% for shareholders, bondholders and depositors with more than €100,000 in the largest two banks, while depositors with less than €100,000 were spared.

The ‘bail-in’ idea of having depositors, and not taxpayers, finance the bailout was suggested by the Troika lenders and was embraced by Cypriot government officials, who faced heated protests. The idea gained popularity because approximately 70% of deposits in the Cypriot banking system belonged to non-EU residents,²⁹ and the origin of much of the funds was perceived as dubious.³⁰ On the other hand, the bail-in created acute political issues. It shifted the burden of the rescue onto wealthy and politically connected individuals, which led to increased pressure on the central bank. The governor was forced to resign and one could argue that the independence of the central bank was diminished.

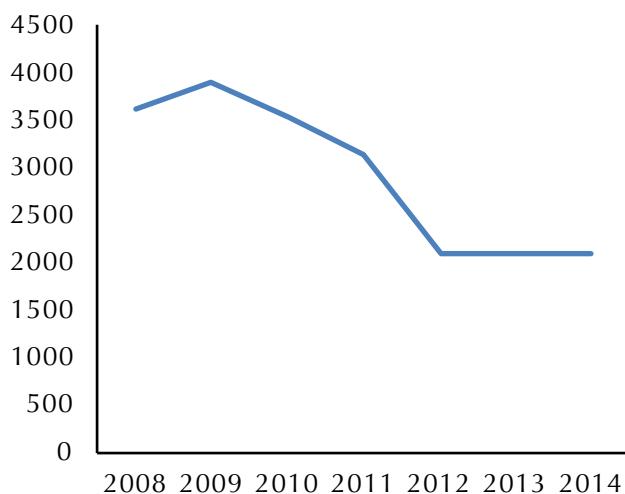
Figure 5 Cypriot macroeconomics



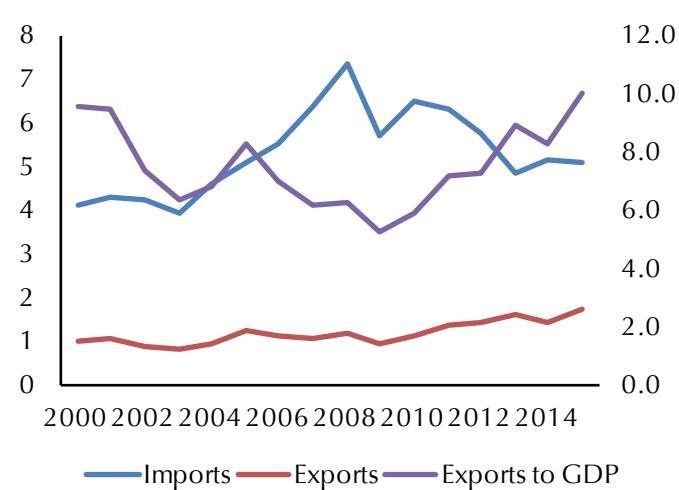
29 Statement made by the governor of the Central Bank of Cyprus.

30 Bank of Cyprus invested in Greek government bonds that offered very high interest rates, but suffered heavy losses in the Greek financial meltdown. Some 60,000 customers transferred funds from low-yielding deposits to take advantage of the promised high-yield bonds, but in the end their money was converted to worthless bank equity. When auditors reviewed Bank of Cyprus records, 28,000 files relating to the purchase of Greek government bonds had been deleted by special software. In the German media, many articles questioned whether German taxpayers should bail out wealthy Russians who had hidden their ill-gotten gains in Cyprus, although the extent to which this was actually the case is not clear.

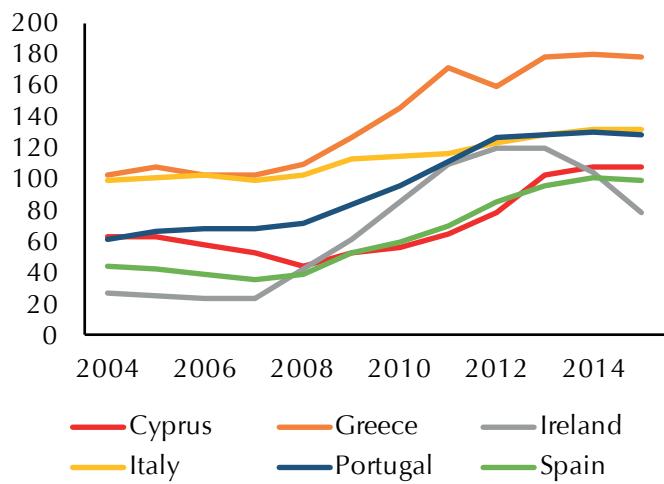
c) Average bank size (millions of euros)



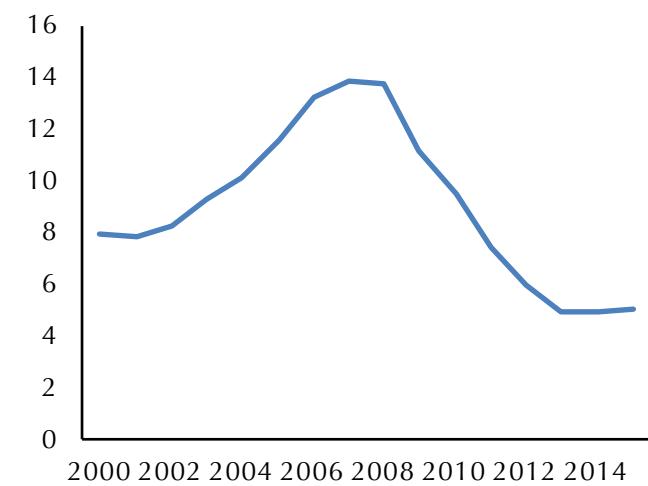
d) Foreign trade (millions of euros)



e) Debt to GDP



g) Household investment (% of GDP)



Source: Eurostat.

The macroeconomic consequences in the short and medium run

The bail-in was a large negative shock to confidence in the financial system. The implementation was terrible: first it was delayed by nine months (the issues were obvious in the summer of 2012, but the EU decided to wait for the election in early 2013 before taking action), and then it was badly executed. Based on this, one would expect a negative macroeconomic outcome.

The macroeconomic performance of Cyprus after the bail-in is rather encouraging, however. Figure 5 shows that GDP has stabilised and unemployment has been falling.

Takeaway from the Cyprus bail-in

What are the takeaways from the Cypriot crisis? Does it tell us anything about what to expect in other countries?

The first takeaway from the bail-in has to be that preserving the government's finances is critical. Most of the Cypriot programme's € 10 billion was used to roll over public debt and cover deficits, and relatively little was lost on bailing out the banks (€1 billion to recapitalised cooperative banks).³¹ The implementation of the bail-in was as bad as it can get and it certainly imposed unnecessary costs on the economy, but despite this, the macroeconomic performance of Cyprus is decent, especially compared to other Eurozone countries in trouble. The logical conclusion is that the benefits of bail-in must be large, since they more than make up for all the costs.

That being said, one should be careful in drawing lessons for countries from the Cyprus bail-in. There are several important caveats.

First, with respect to capital controls, the question is whether they could have been less disruptive, or avoided altogether, had the crisis been dealt with in a timely fashion. There is no question that the nine months wasted before the bail-in made the situation much worse, with growing uncertainty, a worsening of Laiki's losses, deposit flight, and so on. In an optimistic scenario, one could argue that had the resolution happened in the summer of 2012, capital controls might not have been necessary, or at least would have been short-lived. By the time the controls were imposed in March 2013, a lot of capital had left.³²

The second important difference is that a large share of the haircut was imposed on foreigners. The improvement in the net foreign asset position of the country was clearly a positive factor for aggregate demand. This feature is unique to Cyprus and would not apply in other EU countries where a bail-in might be necessary. On the other hand, one should note that it is possible to include this effect in one's analysis. Standard international macro models can be used to estimate the impact of the net foreign assets component of the bail-in and net it out to estimate what would happen under a domestically biased bail-in.

The third important feature of the Cyprus crisis is that non-performing loans have increased dramatically to reach 60%, the highest in the EU. In some sense, this is the flip side of the fact that households have not cut consumption as much as one might have expected. Rather, they stopped paying their debts. From a macroeconomic perspective, this is not necessarily a bad outcome. In many standard macro models, ex post default by households in times of stress is an efficient outcome – it is simply a form of risk-sharing. In practice, however, this makes it very difficult for the banks to recover. It can also create moral hazard to the extent that solvent household strategically decide not to repay.

- **Bail-in works.** Despite its chaotic implementation, the Cyprus bail-in has been surprisingly successful at protecting the economy from a large recession.
- **Earlier is better.** The nine-month delay until March 2013 was damaging. Deposit restrictions would probably have been needed in any case, but would have been much shorter lived if implemented in the summer of 2012.
- **The political economy of bail-ins can be toxic.** Even if the Cyprus bail-in had been implemented early and efficiently, it would still have created much political resentment among the people who profited from the system, and it would still have been a headache for the central bank and the regulators.

³¹ The programme was agreed by the Eurozone member states on 24 April 2013 and by the IMF Board on 15 May 2013. It covered the period 2013-2016 and up to €10 billion, with the ESM providing up to €9 billion and the IMF contributing around €1 billion.

³² It is also important to distinguish capital controls from deposit restrictions. Capital controls are unlikely to be practical in large countries. Deposit withdrawal restrictions, on the other hand, can work in larger countries. Deposit restrictions would have been needed in Cyprus in any case, given the size of the haircut and the loss of confidence in the banking system.

Italian retail exposure to bail-in

Italy in 2016 is a bit like Spain in 2012, but with some important differences. First, it does not have two pillars of strength like BBVA and Santander. Another difference is that it is credit to SMEs – backed by real estate – that is the source of NPLs, instead of loans to households or real estate developers. The other important and peculiar feature of the Italian banking crisis is the exposure of retail investors to junior bank bonds.

As of the third quarter of 2015, Italian savers held about €29 billion in subordinated bank bonds (Bank of Italy, 2016). Overall, the exposure of Italian households to bail-inable instruments (subordinated bonds, senior unsecured bonds, deposits above €100,000) was around 10% of their financial assets, with subordinated bonds representing about 1% of exposure. The distribution across the population is far from uniform, however, and some households might be significantly exposed.

Selling junior bonds to retail investors was a way for Italian banks to access cheap funding during the financial crisis. Between July 2007 and June 2009, 80% of Italian banks' bonds were sold to retail investors (Grasso et al., 2010). Many investors may not have understood the risks they were taking and the misselling seems to have been on a large scale.

This issue came to a head at the end of 2015. In November 2015, Italy rushed to rescue four small lenders before the BRRD bail-in rules fully kicked in in January 2016. The initial plan was to use a deposit guarantee fund financed by other Italian banks to save Banca Marche, Banca Popolare dell'Etruria, Cassa di Risparmio di Ferrara and Cassa di Risparmio della Provincia di Chieti. But this plan ran counter to EU rules on state aid, so DG COMP opposed the bailout and enforced the rules requiring restructuring and a partial bail-in. The banks' bad assets, including non-performing loans, were then split into a separate unit, with losses for shareholders and subordinated debt holders.

Even though the legislation is new, the move towards bail-in was fully expected, so this is a rather clear case of failure by Italian regulators in letting banks issue debt to retail investors. On the other hand, there is no denying the personal and political costs of the bail-in. A pensioner near Rome committed suicide when he discovered he had lost more than €100,000 in Etruria's junior debt in December 2015. In May 2016, a law was passed to partially refund the retail investors of the four banks.

This issue cast a long shadow over the resolution of Banca Monte dei Paschi di Siena (MPS).³³ Five Italian banks were included in the 2015 stress tests. When the results of the tests were disclosed at the end of July 2016, it appeared that the capital stock of MPS would fall below the regulatory minimum under the stress scenario. The deal proposed by the Commission during the summer of 2016 was a bail-in only for junior debt held by professional investors. Senior debt would not be bailed-in, and retail investors would be compensated.

Following the established strategy of European politics, the Italian government refused that deal and played for time. As a result, in December 2016, the government was asked to accept the same deal but on worst terms and with potentially larger costs for taxpayers and investors. In the meantime, it also lost a constitutional referendum.³⁴

On 23 December 2016 trading in MPS shares and bonds was suspended as the government announced a preventive recapitalisation plan, according to Article 32.4 of the BRRD, which avoids the bail-in of senior creditors. This is similar to the pre-BRRD mechanism used in Spain in 2013 in the case of Bankia. Subordinated bonds will be converted into equity at 75% of face value for Tier 1 bonds, and 100% of face value for Tier 2 bonds, in particular held by the 40,000 retail investors. Before the bail-in, Tier 1 bonds traded at around 35% of par, and Tier 2 at around 40%. CDS contracts linked to these bonds must be triggered and retail investors should also receive senior claims to compensate for the misselling. MPS must also get rid of €28 billion in non-performing assets.

The recapitalisation itself is larger than expected. Pre-announcement estimates ranged from €5 to 7 billion, but the SSM announced that it wants MPS to raise almost €8.8 billion. This is driven, in part, by a deterioration of the bank's liquidity position between November and December 2016, down from €12.1 billion to €7.7 billion (4.78% of assets).³⁵

³³ Aside from MPS, there are seven other banks that require more capital: two from Veneto, Carige (from Genoa), and the four small banks rescued last year where deposits are still leaking out.

³⁴ The constitutional referendum took place on Sunday, 4 December 2016. The proposition was to amend the Italian constitution to reform the composition and powers of the Parliament and the division of powers between the state, the regions and administrative entities. The proposition was rejected.

³⁵ The fate of the public support granted to Monte dei Paschi in the form of capital instruments is unclear, as the Italian state may be unable to sell the shares on the market after expiration of the state aid granted.

The overall package, for all Italian banks, is €20 billion. The plan approved by the government specifies that the banks have until the end of June 2017 to ask for state guarantees on their bonds with maturities ranging from three months to five years. If a bank needs more than €500 million and the guarantee applies to more than 5% of their outstanding debt, then they must present a restructuring plan.

Part 3: Challenges and recommendations

In the first part of the report, we described the main features of the US and EU resolution frameworks, highlighting important similarities and differences. In the second part, we presented a series of short case studies of recent bank rescues. Many rescues have been costly for taxpayers, and the BRRD is meant to lower these costs. To have a material impact, it should be possible to implement a bail-in of at least 8% of initial assets.

In this part, we explain the key challenges for bank recovery and resolution in the next few years, and make some policy recommendations.

It is important to emphasise that the BRRD provides, in theory, a rather strict framework without much flexibility. This is a consequence of the fact that it was negotiated by 28 member states. Each member state might consider that flexibility in dealing with its own banks would be valuable, but would be reluctant to grant the same flexibility to other member states. The Nash equilibrium outcome is a framework that is likely less flexible than one would expect based on the preferences of the average participant.

This is not necessarily a bad outcome, since individual regulators might have too strong a preference for forbearance. But it creates specific issues of implementation, especially in the short term.

The operational issue is compounded by the fact that we are not in a steady state as far as banks' balance sheets are concerned. For various reasons, Europe decided to move faster on BRRD than on MREL. Banks have not had the time to build enough MREL to facilitate resolution. One can therefore assume that banking resolution in Europe is going to become easier as time passes. Short-term challenges and frustrations should not be used to conclude that the process is doomed.

Establishing credibility: Common good, private cost

European regulation has evolved drastically over the past five years. A new system is in place. It has sound principles but, like any new system that has not been battle-tested, it lacks credibility.

The good news is that the new system is already more credible than the old one. Portugal provides a perfect illustration. The troubles at Banco Espírito Santo were known for a long time but no action was taken. Then came the Comprehensive Assessment and the issues were tackled.

The bad news is that this is not enough. The old system had such a strong preference for forbearance that simply doing better is not enough.

Why credibility is important

Credibility is important for two reasons, one more relevant to the SSM, and one more relevant to the SRM. First, for private sector incentives, it is important that creditors expect to bear the losses if a bank needs to be resolved or failed.

Second, if resolution works in theory and in practice *most* of the time, it does not need to work *all* the time and it will not need to be used much, because bond holders are likely to accept a voluntary restructuring, which is often an efficient outcome.

Why the SSM and SRM need to be more proactive, not less

It is important to make the SSM and SRM operational. Because of the need to establish credibility, it makes sense for the SSM and SRM to be more proactive, rather than less proactive, at least in cases that do not involve a global systemically important financial institution (G-SIFI). If a medium-sized institution (by European standards) runs into trouble, it makes sense to seize the opportunity. The regulators should apply the rules and not listen to the Cassandras claiming everything is systemic. On the other hand, because operational issues are more likely than

not, the ECB should stand ready to provide as much liquidity as needed to any part of the system, as well as intervening in sovereign debt markets if necessary.

In that sense, the key advice should be to “never let a crisis go to waste”. We view the (belated) action with Banca Monte dei Paschi di Siena as a case in point.

Of course, in the short term, it is more likely that there will be operational mistakes, which brings us to the political issue.

Why the political issue is real

As explained above, credibility is a common good. But establishing credibility is not a common cost – it is a cost borne by those countries with weak banking systems. This is indeed a very common issue in Europe.

The issue is that Europe often has difficulties finding a credible way to compensate the losers. Italy is a case in point. Italian supervisors have traditionally used the deposit guarantee fund as a crisis management tool, but now this is considered part of state aid (as it should be).

This creates real political costs that cannot be ignored, especially by countries such as France and Germany that have managed to avoid any form of bail-in (as the cases of Credit immobilier de France, Dexia and Hypo Real Estate, among others, show).

And Slovenia and Cyprus are understandably annoyed since they had to go through the bail-in process themselves.

There has to be a clear separation; the SSM and SRM should be absolutely independent and should apply the rules. We have already seen the danger of fiscal/political free riding in monetary policy, where heads of states and governments are happy to let the ECB bear the brunt of the effort, including in areas where it stretches its mandate, such as outright monetary transactions.

We should strive to avoid political free riding in banking supervision and resolution. It must be clear the SSM will move first, based only on its rulebook. Considerations of political fairness should be left to the Council and the Commission. At the same time, during the transition period to full MREL, we should not take too harsh a stance on retail investors, even if this creates some costs for the taxpayers. Compensating retail investors during what is clearly a regime shift is unlikely to create moral hazard and is likely to increase political support for the entire process. The real tragedy would be more forbearance for fear of hurting innocent investors.

It is also important to emphasise that the failure of the old regime should not only be measured in the eventual allocations of losses, but equally importantly, in the time wasted before action was taken. Overall, while there has been much progress, we feel that there is still too much forbearance built into the system.

- **Proposal 1:** *The SSM should absolutely break with the European tradition of ‘too little, too late’ by acting early and proactively, even if this creates some (limited, short-term) financial volatility.*

We are of course not advocating risky gambles. On the other hand, investors need to learn how to live with the new bail-in approach. Sometimes they will be upset, but this is par for the course. We believe that obsessing about any sign of short-term volatility is a sure way to create much larger volatility in the long term.

One issue is that the board of the SSM is made up of national regulators and central bank governors. This is clearly not an ideal situation. By contrast, the board of the SRB is a truly European institution, with six board members chosen in a transparent way based on their competence.

- **Proposal 2:** *The board of the SSM should be made more independent, with more permanent members, along the lines of the board of the SRB.*

The need to monitor who holds bail-inable instruments

The problems created by retail investors' holdings of banks' junior debt show that it is imperative for regulators to continuously monitor who is exposed to bail-in risk (see the earlier discussion of Italy). This has a first-order impact on the credibility of the bail-in. As of now, regulators do not have the means to track exactly who holds the subordinated debt that is part of MREL.

Consumer protection is not part of the Banking Union. It is still a national prerogative for many reasons, most of them sensible, but it cannot be completely left out if it interferes with resolution.

The issue of who holds the bail-inable debt is not perceived to be a significant one in the United States right now. Commercial paper issued by BHCs was clearly an issue during the crisis, but it has essentially disappeared. This lowers the risk of runs on money market mutual funds in case of bail-in. The long-term debt issued by BHCs, on the other hand, is held by mutual funds, as it should be from a diversification perspective. Meanwhile, the FDIC has been arguing for several years that the current long-term debt of SIFIs would be bailed in case of distress. As a result, it seems fair to assume that TLAC instruments will trade pretty much like current long-term debt.

It is also interesting to ask what would prevent, in the United States, the direct sale of bail-inable debt to retail, as Italian banks did. The answer is that the SEC would force disclosure of the risk and the Fed would veto the process. This has not always worked well, however. The United States did actually experience some of these issues 30 years ago when thrifts issued subordinated debt to their retail clients (the main example was Lincoln Savings). This should have been prevented by the Office of the Comptroller of the Currency. Today, when an instrument not subject to deposit insurance is sold via branches, there are extra disclosure requirements – it is labelled "not FDIC insured". This argument is also related to the debate around the structure of bank holding companies. In the United States, TLAC instruments are issued only at the BHC level, not by banks using their branch network. The risk is thus less than in Europe, where banks sell all kinds of banking and insurance products directly in their branches.

Misselling is clearly a critical issue in Italy, but it also happened in Portugal, and perhaps in some other European countries. This is inconsistent with the enforcement of the resolution regime and needs to stop.

- **Proposal 3:** *The revision of the Capital Requirements Directive (CRD4) and the Markets in Financial Instruments and Investment Directive (MiFID) should include a rule that retail investors cannot be sold directly to retail investors. They can, of course, choose to be exposed to such debt, but only via diversified mutual funds.*

It is also important that regulators know where the bail-inable debt is held. This is of course difficult for traded instruments. At the very least, the exposures of insurance companies and pension funds should be reported to the resolution authority.

- **Proposal 4:** *The ECB/SSM should maintain a database to identify the main holders of bail-inable debt.*

Design of stress tests

There is an interesting interaction between stress tests and resolution. Regulators have broad powers to intervene via precautionary recapitalisation or via resolution/bail-in. The design of the stress tests has a significant impact on this choice because:

- if a bank fails the baseline, then it should go to bail-in; but
- if a bank is fine under the baseline but fails the stress scenario, then it qualifies for precautionary recapitalisation (this is what happened to Banca Monte dei Paschi di Siena).

This creates a potential issue when designing the stress tests. In the case of the most recent stress test for Italy, the baseline was rather lenient, even though the adverse was rather tough. Monte dei Paschi (or any other weak bank) is thus likely to pass the baseline but fail the adverse, and therefore qualify for precautionary recapitalisation.

This is not to say that the baseline is biased. As Camara et al. (2016) show, the EU/EBA/ECB scenarios do not appear to be biased. And the baseline is based on the previsions of the Commission that are typically close to the previsions of the private sector. The problem is that a statistical forecast is not really what is called for in this case. If the forecast represents the median, there is a 50% chance of something worse. Saying that the bank is fine under the baseline is not saying much.

As a result, there is a built-in preference for ‘precautionary recapitalisation’, which often means more forbearance, more denial and more time wasted before real action is taken.

It would be better to include a moderately adverse scenario (something like the bottom 25% or 30% of likely scenarios) and use this scenario to assess the need for bail-in. It would have been easy, for instance, to include negative rates, deflation or sluggish growth in a moderately adverse scenario. Being well capitalised then simply requires the bank to be fine under these assumptions, which are neither extreme nor unlikely.

- **Proposal 5:** *The stress tests should include a moderately negative scenario in addition to the baseline and the severely adverse scenarios. The moderately adverse scenario should be used instead of the baseline to decide on bail-in versus precautionary recapitalisation.*

Harmonisation and predictability of insolvency and collateral security laws

We strongly believe that creditors’ rights should be consistent and predictable. It is sometimes argued that constructive ambiguity can be useful to alleviate moral hazard. It is important to understand, however, that this applies to the ranking of banks, not the ranking of creditors within a bank. To take a simple example, suppose that a country has four banks and that it is common knowledge that, in a systemic crisis, the government will save at least two banks. Then it is clearly optimal to be ambiguous about which bank will be saved. In fact, under some condition, strategic ambiguity can remove moral hazard distortions entirely since each bank faces a high risk of not being saved. On the other hand, if and when the bank fails, *ex post* efficiency requires that investors know where they stand in the hierarchy of creditors.

The implementation of the TLAC/MREL requirements in the national insolvency laws of the EU member states has led to increasing divergence in terms of creditor hierarchies. These divergences are widened by the fact that national insolvency and collateral security laws are not aligned. In this section, we take three examples – the implementation into the Italian, French and German laws of the MREL/TLAC requirements – in order to illustrate these differences.

The Italian legislator chose to implement a preference given to depositors in the case of the resolution of a financial institution. In July 2015, the Italian parliament approved a delegation to the government to implement the BRRD based on a legislative decree. The new resolution mechanism gives priority to deposits over other senior unsecured debt. Under the previous legislation, depositors and bondholders had the same rank and were hence supposed to share losses equally.

In German law, a part of the previous senior creditors became subordinated to the remaining senior debt since 1 January 2017. Pursuant to the German Resolution Mechanism Act of November 2015, derivatives, collateralised bonds and structured notes will rank first during a resolution procedure and the remaining unsecured senior debt will rank below. The dispositions of the German Resolution Mechanism Act apply retroactively to all the previous debt issuances – without modification to the contractual agreements.

In French law, the Sapin II Bill from December 2016 modified the creditor hierarchy from the French Monetary and Financial Code applicable to the resolution of a credit institution.³⁶ The new disposition creates a new category of “senior non-preferred notes” as opposed to “senior preferred notes”, with the objective of facilitating the implementation of the bail-in tool. Senior non-preferred notes would be considered as eligible liabilities under the MREL/TLAC requirements.

The senior non-preferred notes must meet the following criteria:

- the terms and conditions of the issuance must provide that the notes shall rank after any other unsubordinated institution and senior to any subordinated obligations of the credit institution;
- the minimum maturity of the notes shall be of one year; and

³⁶ Refer to the modified Article L.613-30-3 of the French Monetary and Financial Code.

- the notes must not qualify as structured products (this concept will be defined in a separate decree).

In contrast to German law, there is no retroactive application of the law, i.e. a preference will be granted to the creditors whose notes were issued before the entry in force of the new disposition. Two particularities of the French transposition should be also highlighted here:

- If a normal insolvency procedure is opened against the institution under corporate insolvency law, the above-mentioned categorisation will be restricted to “credit institutions” and will not be applicable to the broader category of “financial institutions” as defined in the BRRD.
- The above-mentioned categorisation is only applicable to a liquidation procedure, followed by a winding-up of the credit institution, and not to a restructuring procedure. For the latter case, the normal creditor hierarchy under corporate insolvency law will be applicable.

We also noted further discrepancies in the transposition of the TLAC/MREL requirements into German and French law, such as different definitions of the eligible deposits category (German law considers financial products qualifying as “certificates of saving deposits” to be eligible deposits, for example, whereas French law excludes some deposits against public institutions from the eligibility criteria³⁷ and does not include the deposits of mixed holding companies in the list of non-eligible deposits).

Aside from the transposition divergences relating to the TLAC/MREL framework, national insolvency laws are currently not harmonised within the EU. Hence, the creditor hierarchy may differ from one country to another if normal insolvency proceedings are opened against a financial institution. The two above-mentioned particularities relating to the French liquidation procedure applicable to credit institutions are an illustration of such divergences. Another example is the ranking applicable to senior liabilities of a financial institution in German law, where negotiable debt securities instruments and specific registered bonds bear losses first, and the remaining senior liabilities bear losses afterwards.³⁸ Such a disposition does not exist in French law.

Furthermore, there are material differences between the collateral security laws of EU member states. The rights of creditors of non-performing loans are therefore different from one country to the next. For example, the UK securities law relies on the concept of fixed and floating charge. In case of a non-payment under the loan agreement, the obligation is considered to be defaulted in a short timeframe, triggering a conversion of the floating charge (i.e. security interest over a pool of changing assets) into a fixed charge (i.e. security interest over specific assets of the pool). The French securities law does not apply this framework – the realisation of a collateral is a more formal procedure relating to specific assets, and the triggering of such event following to non-payment under a loan agreement may take several years. Another example is the conceptual difference between the French and German property laws, which leads to a different treatment of the collateral (under German law, for example, a pledge can only be realised following the physical transfer of the asset to the creditor, which is not the case under French law).

The three above-mentioned differences in (i) national insolvency laws, (ii) transposition of the TLAC / MREL requirements leading to different creditors’ hierarchies, and (iii) collateral security laws lead to material legal uncertainty in the EU relating to the treatment of creditors.

We hence recommend that a further degree of harmonisation should be requested from the national legislators to ensure that the definition of the creditor categories is aligned with the BRRD. In particular, the definition of senior and junior creditors should not refer to national insolvency laws, which are currently not harmonised. No broad scope for interpretation should be given to national legislators. The harmonisation of the definition of the hierarchy categories in the EU would give a similar status to banks’ creditors, and represents a further step towards stronger legal certainty.

With respect to creditor hierarchies, we recommend that the resolution authority should conduct a standardised exercise on all large banks to ensure that all significant classes of creditors (say, with at least 1% of total liabilities) would be ranked similarly irrespective of the country of origin of the bank. The SRB could define a template for a given loss rate (e.g. 20% of total assets) and examine how the losses would be allocated according to the national insolvency regime.

While we note that insolvency surveys have been conducted across the European Union to assess the divergences between the member states, we recommend that a complementary survey is conducted to assess the differences between the different collateral securities laws.

³⁷ For example, the deposits from “La Caisse des Dépôts et Consignations”; for further details, refer to Article L518-1 of the French Monetary and Financial Code.

³⁸ Article 46f(6) KWG.

- **Proposal 6:** *Conduct a survey to quantify the potential differences in treatment of creditors under the collateral securities laws in the EU member states in order to provide some legal clarity to investors across the Union, and perform an assessment on the transposition differences relating to the creditor hierarchy under the TLAC / MREL requirements.*

In the long run, one could even go further. In the United States, many specialists of bankruptcy law have advocated a new, dedicated chapter (Chapter 14, instead of Chapter 11) of the Bankruptcy Code to deal with the bankruptcy of a SIFI.³⁹ The CHOICE act might implement this idea. In July 2016, a 'Chapter 14' bankruptcy reform obtained the approval of the House of Representatives as part of the Financial Institution Bankruptcy Act, which is considered an important step towards a separate bank insolvency legislation. As the European Union moves towards harmonisation of the insolvency regimes of its member states, we would support such an approach.

The creation of a separate bankruptcy chapter within the national insolvency laws would be a second step in the harmonisation process. Such an additional bankruptcy chapter only makes sense if national insolvency laws are aligned. In particular, we recommend that this specific chapter cover the following points:

- **Insolvency filing:** The right to file an insolvency procedure should belong to the management of the financial institution, to the most material creditors and to banking authorities.
- **Conditions of opening:** The conditions to open the insolvency procedure should involve undercapitalisation, balance-sheet indebtedness and illiquidity.
- **Scope of the bankruptcy chapter:** The bankruptcy chapter should be applicable to companies predominantly engaged in financial activities, where the term "predominantly" would be quantified and the "financial activities" would be precisely listed in the law.
- **Insolvency procedure:** The opening of the insolvency procedure would lead to an automatic stay on all the claims against the failing financial institution. The judge would determine whether secured claims can be satisfied through selling of the underlying collateral, based on market conditions. A special regime would be applied to protect clearing houses and ensure financial stability (i.e. the clearing houses would be automatically recognised as systemically important). The rules applicable to voidable transactions would be extended to all types of claims, independently from their financial or non-financial nature.
- **Continuation of the activity of the financial institution:** A predominant role would be given to senior creditors in the determination of the content of the insolvency plan. A specific privilege (super-senior claim) would apply to counterparties financing the insolvency procedure through additional credit lines.
- **Proposal 7:** *In the long run, we recommend that the Banking Union adopt a dedicated bankruptcy chapter for financial institutions to ensure a disconnect between the bank insolvency legislation and the corporate insolvency legislation.*

³⁹ For a short discussion and references, see Adler and Philippon (2016).

Timing and coordination

Regulators have about 50 hours to resolve a bank (from Friday night in New York to Monday morning in Tokyo). On the other hand, it takes at least six months to value the assets (six months is the estimate of the Bank of England and is probably a lower bound). Hence, there is insufficient time to perform an efficient separation between a good bank and a bad bank. However, the application of the bridge bank and of the bail-in tools supposes a clear separation between high-quality assets on the one hand (going-concern) and non-performing assets on the other hand (gone-concern). This leads to the creation of a 'virtual' good bank in real time, which may be disconnected from the balance-sheet composition of the failing financial institution.

We would like to highlight that the IT systems of SIFIs are very complex and involve a reconciliation between financial accounting and credit, market and liquidity risk numbers. A valuation process of the assets, as well as an estimation of the loss-absorbing capacity, involves both IT systems. Getting accurate accounting and risk numbers implies performing additional IT work over the weekend (such as batch processing across the systems). In the case of an international SIFI involving a complex IT infrastructure and different time zones in particular, the running of such IT valuation processes may take additional days of work (i.e. it cannot realistically be performed in 50 hours).

The potential issue in Europe is that the process to approve the resolution is complex and fraught with uncertainty. The European Commission and the Council might raise objections, but there would not be enough time to agree on an alternative solution, so such an objection will likely represent a veto of the proposed approach. This could lead to economic inefficiencies, including a loss of the enterprise value of the failing financial institution.

The SRB and Commission therefore need to agree on the point of non-viability in advance. This means that *ex ante* coordination among the regulators is all the more important, starting with the recovery and resolution plan. The recovery plan is filed with the SSM and reviewed by the SRB. The resolution plan is filed with the SRB and reviewed by the SSM. The whole process takes a significant amount of time, but it is critical to ensure proper coordination.

The power to trigger resolution is clearly the most important power in the whole process. The SRB can trigger the process either after receiving a communication from the SSM, or under its own initiative. If the SRB disagrees with the SSM, it can notify the SSM, conduct an assessment and trigger the resolution if the SSM does not do so within three days of the notification. This second trigger is probably not meant to be the normal one, but it gives the SRB more influence over the process. The inclusion of the second trigger was somewhat controversial, but we feel that it is an important part of the process.

At this stage, we believe that the level of cooperation between the SRB and the SSM is good and that it should be commended and encouraged. On the other hand, the US experience shows that cooperation might appear to be satisfactory in good times, with efficient sharing of information, only to break down when a crisis comes. We would therefore argue that the cooperation, coordination and information-sharing processes between the SSM and the SRB should be formalised and explicitly guaranteed, based on a Memorandum of Understanding detailing contractual cooperation conditions in a normal and in a crisis scenario.

- **Proposal 8:** *Clarify the right of the SRB to weigh in on supervisory matters. Establish a Memorandum of Understanding laying down the conditions of the cooperation between the SRB and the SSM, including the joint review of recovery and resolution plans and information sharing in a crisis scenario.*

We note that cooperation and coordination between the SSM and DG COMP is also critical. As discussed in Part 1, DG COMP is a crucial element of the EU framework, and in recent years it has made many of the most important decisions regarding bank resolution. This makes sense in the current EU context, but it highlights the importance of coordination between the various bodies.

Living wills and liquidity

Living wills are probably the least understood but also one of the most important changes in financial regulations in recent years.⁴⁰ They are misunderstood because commentators fail to appreciate that this is an ongoing process in which learning-by-doing plays a crucial role. Many commentators base their views on the first vintages of living wills, which is about as sensible as judging a software based on its unstable beta-release. Obviously, the first vintages of living wills were mostly a mess, fraught with incredible assumptions about what the banks would do in case of resolution.

But the more recent vintages are a lot better, even if still far from perfect. And in fact, there is no sense in which living wills need to be 'perfect'. The value added of the living wills requirement is twofold. First, it pushes companies to simplify their legal and operational structures to make resolution possible. Second, it provides a blueprint when resolution is needed. The fact that the actual resolution is likely to involve surprises and unexpected operational issues does not invalidate the usefulness of the blueprint.

The United States introduced living wills earlier than Europe and the positive impact of living wills is becoming clearer. Europe should follow suit and not be discouraged if the whole process feels a bit overwhelming at first.

The main difficulties in dealing with banking insolvency are time and liquidity. Time is short because a financial institution will not survive for long when investors and creditors lose confidence. Liquidity is needed to refinance positions and to minimise losses from fire sales of assets on the financial markets.

Liquidity management is the most difficult operational part of resolution. BHC guarantees often fail during crises. The subsidiary tends to assume that the group will provide liquidity. Hence, a special emphasis should be placed on the liquidity risk management features of the failing financial institution. In practice, international banking groups manage their liquidity pool based on an internal intraday liquidity model. Such a model involves the participation of the holding company and of a specific subsidiary that rebalances the available cash at the start of the day to the other subsidiaries of the group. This subsidiary usually has access to the central bank liquidity facilities and has the necessary IT systems. In case of resolution, it is critical that intraday cash rebalancing works as usual inside the group. Specifically, there must be a way to ensure that subsidiaries that are healthy but face liquidity problems within the day if the holding company is insolvent continue to operate. Consider Lehman Brothers, for instance. Its intraday liquidity model relied on a funding framework with a chain of cash positions. From a refinancing perspective, the key subsidiaries were as follows:

- Lehman Brothers Bank: Funded all the US residential mortgage business as well as the commercial mortgages and investment grade US loans, and was granted access to the Fed discount window.
- Lehman Brothers Commercial Bank: Funded all the commercial mortgages, derivative receivables and corporate and industrial loans, and was granted access to the Fed discount window.
- Lehman Brothers Bankhaus: Funded all the securities on repo and loans (commercial, residential and corporate) and was granted access to the Fed discount window.

An orderly winding-down of Lehman Brothers would have been facilitated with the granting of refinancing facilities to the three above-mentioned subsidiaries, even if insolvency proceedings were opened at different points of time against the different entities of the group.

One important step in this process is to provide incentives for banks to comply with the spirit of the requirement, i.e. to simplify their structure and ease the resolution process. Regulators should impose higher MREL on banks that do not comply with the living will requirement.

- **Proposal 9: Regulators should impose higher MREL on banks that do not provide credible living wills, in particular with respect to how they would manage liquidity in resolution, in either SPE or MPE frameworks.**

Other banks often refuse to deal with banks post bail-in, so liquidity support from the central bank is needed. It does not really make sense to have SSM and SRM, and yet keep emergency liquidity assistance (ELA) at the national central bank level. Following Schoenmaker (2016), we think that it makes sense to move ELA closer to the ECB. We do not think this is a priority, however, since the ECB already has de facto control of ELA above a

⁴⁰ See the section on living wills in Part 2 for more details.

threshold. There is also the legal issue that the ECB's financial stability mandate is rather fuzzy, while national central banks' stability mandates are rather clear.

- **Proposal 10 (low priority):** *ELA for banks in resolution should be moved from national central banks towards the ECB, perhaps in a dedicated facility. If the legal framework does not allow it, then at least the required consent of the council of governors should be strengthened. It might also make sense to use the Single Resolution Fund (SRF) to provide liquidity instead of only capital.*

Cross-border resolution and the choice between SPE and MPE

Cross-border cooperation has long been recognised as the weakest link in the resolution of SIFIs. The good news is that regulators have made significant progress in recent years. However, just as in the case of living wills, this progress has not been well understood. The first point to emphasise is that crises working groups are actually working well. The number of participants is rather limited and, as a result, they are willing to share sensitive information.

The other two key improvements are the FSB's TLAC and the ISDA protocol, discussed below. Together, they have changed the resolution landscape over the past five years. The ISDA protocol is a prime example of what came out of these multilateral efforts. More remains to be done, to be sure. An internal TLAC can be used to facilitate cross-border resolution, but finalising the rules for down-streaming the TLAC will probably take a long time.

The SPE/MPE choice is one dimension of the resolution framework. Under SPE, all bail-in takes place at the level of the bank holding company. Under MPE, bail-in happens in several subsidiaries at the same time. In theory, SPE can be more efficient, but it requires significant cooperation between jurisdictions. In practice, the choice between MPE and SPE depends on the interconnectedness of subsidiaries within the group, and whether the going-concern option is available.

In the context of the Banking Union, however, there is another dimension to the problem: should we think of the EU, the Banking Union, or the Eurozone as a single jurisdiction?

The BRRD rulebook applies to the entire EU, but cross-border issues remain thorny. On the other hand, the Eurozone really should be a single jurisdiction. In fact, we think that this is the key metric for judging the completion of the Eurozone.

As of now, there is no guarantee that national regulators would not ring-fence liquidity in case of trouble *within* the Eurozone. In 2005, UniCredit bought HVB, Germany's second-largest lender. This was a big cross-border merger that was seen as the sign of future deals and the emergence of truly European banks, as UniCredit's CEO Alessandro Profumo argued. In 2011, however, BaFin (the German regulator) tried to prevent UniCredit from transferring cash to its Italian parent because it was worried about the financial health of the German subsidiary. This is clearly inconsistent with the free movement of capital in Europe. The Banking Union, which did not exist at the time, cannot function properly if this kind of ring-fencing occurs within its jurisdiction.

- **Proposal 11:** *A litmus test for whether the Banking Union is complete is whether the Eurozone can be considered a single jurisdiction as far as liquidity and capital are concerned. Ring-fencing inside/outside the Eurozone can make sense, but ring-fencing within the Eurozone defeats the purpose of the Banking Union. MREL, SRF and the European Deposit Insurance Scheme (EDIS) must be strong enough to ensure that liquidity and capital remain freely mobile within the Eurozone, both before and during resolution.*

A full Banking Union requires a common deposit insurance scheme. The burden-sharing rules are likely to be complex, however, and it is difficult to define a level of risk-sharing that is sufficient. In a sense, our litmus test is a quantification of the required size of the third pillar of the Banking Union.

It is also important to emphasise that common backstops can reduce moral hazard. A common backstop can enhance the credibility of both supervision and resolution. For instance, Faria-e-Castro et al. (2016) show that a fiscal backstop mitigates the risk of financial instability and allows governments to run more aggressive stress tests.

International banks within the EU face problems relating to the free transfer of liquidity across the subsidiaries of a banking group. This problem has been identified as part of the liquidity coverage requirement (LCR) rules, which require banks to subtract non-available liquidity from the pool of liquid assets reported in the liquidity ratio. Cash and liquid assets that are not freely transferable within the banking group are identified as 'trapped liquidity'.

Liquidity is considered to be trapped where operational or regulatory constraints prevent a free transfer from one subsidiary to another subsidiary, or from a subsidiary to the holding company. Given that the regulatory constraints are quite different from one country to the next, we recommend that a survey is performed across the EU relating to the regulatory ring-fencing of liquidity to ensure comparable treatment of trapped liquidity across member states, as well as to encourage the development of a liquidity pool within the Eurozone.

Finally, our view is not that all banks should adopt an SPE approach to resolution; an MPE approach can work better for some groups. But there must be a clear distinction between what happens within the Eurozone and what happens between the Eurozone and the rest of the world. The Eurozone clearly is not a single jurisdiction today, but our view is that it needs to become one, which means that capital and liquidity should move freely within its borders.

Derivatives, short-term liabilities and safe harbour

The ISDA protocol has been very useful, but there is still a debate in the Basel Committee about the treatment of liabilities held by other banks. Another important issue is the safe harbour provision that exempts derivatives from automatic stay in bankruptcy. This might give an unfair advantage to derivative contracts and lead to more derivatives being written.

Short-term liabilities

Short-term liabilities are excluded from the scope of the bail-in resolution tool in both the EU and US frameworks, and hence are privileged compared to the other senior claims in the creditor ranking hierarchy. This situation leads to a short-term refinancing model in the financial sector with a roll-over of the financing transactions on the liabilities side – which is expected to be at lower cost compared to long-term refinancing sources. The share of short-term refinancing on the balance sheet should certainly be reduced by the MREL requirements, but the economic incentive will not disappear. Financial institutions may refinance the maximum share permitted of their balance sheet through short-term transactions.

Pursuant to Article 44(2) of the BRRD, resolution authorities shall not exercise the write-down or conversion powers in relation to liabilities of financial institutions, excluding entities that are part of the same group, with an original maturity of less than seven days.

The justification for this treatment is justified as follows (point No. 70 of the preamble): "*to reduce risk of systemic contagion, the bail-in tool should not apply to (...) liabilities to institutions, excluding entities that are part of the same group, with an original maturity of less than seven days*". However, refinancing models with a high reliance on short-term transactions play a significant role in the acceleration of a systemic crisis. The refusal to roll-over the financing transactions may lead to a general liquidity grid-lock on the interbank market.

In the US resolution framework, short-term unsecured liabilities shall rank equally with the other senior unsecured liabilities. However, and as we described in Part 1, the FDIC may exclude certain liabilities from the allocation of losses pursuant to the contractual ranking order. The exceptions listed in 12 USC Section 5390(b) (4)(A) are broad and do not refer specifically to short-term transactions. However, Section 380.27 of Title 12 CFR specifies that long-term senior debt shall not receive more than the amount established and due under USC 12 Section 5390(b)(1) (i.e. it shall not be privileged against other senior claims). Long-term debt is defined as "*long-term senior debt issued by the financial institution to bondholders or other creditors that has a term of more than 360 days*". Hence, short-term senior debt should generally rank higher and bear smaller losses than long-term debt.

A major economic consequence of the exclusion of short-term liabilities from the bail-in resolution tool is that short-term creditors do not have strong incentives to monitor the health of the debtor under normal circumstances. Such creditors can walk away in a crisis situation by refusing to roll-over or by terminating the financing transactions, without supporting the costs related to the debtor's insolvency. An exception to the application of bail-in power should only be possible where the short-term claim is essential for the continuation

of the procedure. The granting of an exception should be based on this essential character and should not rely on a duration consideration only (for example, seven-day claims are exempted for the bail-in power) to avoid a distortion of the refinancing models of the bank. While we note that such a distortion is tempered by the new regulatory requirements relating to the LCR and the NSFR treatment, there is a further risk of temporary distortion created by the time gap of the implementation of the bail-in requirements in 2016 and the implementation of the TLAC / MREL requirements in 2019.

Qualified financial contracts

Furthermore, specific financial transactions are relieved of the automatic stay applicable to commercial contracts in the EU and US resolution frameworks as well as in corporate insolvency law. The underlying collateral of secured financial transactions can be sold on financial markets in a crisis situation, thus creating negative price spirals. Without an automatic stay, the debtor is not granted a period of 'breathing space' to restructure its balance sheet.

Under the EU resolution framework, specific rules apply to financial contracts, which are defined as securities contracts, commodities contracts, futures and forwards contracts, swap agreements, inter-bank borrowing agreements with a residual maturity of three months or less and master agreements relating to the above-mentioned contracts (Article 2(1) BRRD). Pursuant to Article 71 of the BRRD, the resolution authority shall have the power to suspend termination rights from financial contracts for the duration of one business day, provided that the payment and delivery obligations, as well as the provisions of collateral, continue to be performed. In case of exercise of the bail-in power against derivatives contracts, the counterparty is allowed to close-out and terminate the transaction immediately. For secured financing transactions, the resolution authority has the power to restrict the enforcement of security interests, which is also limited to one business day.

The definition of a "qualified financial contract" under the DFA framework is more restrictive than the BRRD definition and does not cover inter-bank borrowing agreements. The FDIC can add particular agreements to the legal list of 12 USC Section 5390(a)(8)(D) by way of a separate resolution, regulation or order. Qualified financial contracts are granted an extended right of set-off (12 USC Section 5390(a)(12)(A)), may not be avoided except for a limited case (12 USC Section 5390(a)(8)(C)), and the related payment or delivery obligations can be suspended for the duration of one business day (12 USC Section 5390 (b)(8)(F)).

Qualified financial contracts are also protected under normal insolvency law. In particular, secured financing transactions benefit from a special treatment pursuant to the EU Directive of 6 June 2002 on financial collateral arrangements. Counterparties to those financial transactions are granted an extended right of set-off, the right to close-out and terminate the transaction pursuant to the contractual terms (including selling of collateral) and the right to perform collateral transfers near to or during the bankruptcy procedure (for example, margin calls) which would have qualified as fraudulent transfers pursuant to insolvency law. The US Bankruptcy Code contains comparable rules in Title 11 USC Section 546(e) ff.

The application of a limited automatic stay of one business day to financial transactions has negative economic consequences, both for unsecured and secured financial transactions. The case of Lehman Brothers shows that, for unsecured derivatives transactions, the bankruptcy treatment granted to derivatives holders allows 'cherry-picking' on the side of the debtor's counterparties. Certain counterparties of Lehman did not terminate their securities and derivative contracts, as such termination would have resulted in a net payment to Lehman, which at the time was 'in-the-money' for these transactions. Counterparties 'in-the-money' (i.e. those expecting a net payment from Lehman) terminated their securities and derivatives contracts and used their right of set-off. This situation leads to economic losses for the failing financial institution and represents a hurdle to the continuity of its functions as a financial intermediary during a restructuring or an orderly winding-down procedure.

For secured financial transactions, the walkaway clauses in repurchase agreements may lead to systemic consequences in the financial system. Ex ante, financial institutions use predominantly short-term financial transactions for refinancing purposes (before the financial crisis of 2008, Lehman Brothers and Bear Stearns were refinancing 25% of their balance sheet with repurchase agreements). In a systemic crisis situation, the enforcement of the walkaway clauses in secured financial contracts and the corresponding selling of the collateral on the financial markets accelerate the liquidity crisis and lead to a negative price spiral. A general loss of value of financial collateral reduces the refinancing capacity of the financial sector, which leads to rapid sales on the asset side of the financial institutions, and to a global deleveraging spiral. Skeel and Jackson (2012) summarised this situation as follows:

"(...) the lack of a process, or mechanism, to ensure an orderly disposal of the assets collateralizing repos across all creditors (...) lead to rapid sales, price dislocations and a deleveraging spiral".

Our recommendations regarding the safe harbour for financial transactions are as follows:

- **Proposal 12:** *Give the resolution authority more flexibility in relation to the duration of the automatic stay applicable to financial transactions, with the right to extend the automatic stay for a duration greater than 24 hours.*
- **Proposal 13:** *Reformulate the exception granted to short-term unsecured senior debt from the bail-in power, so that the exception does not rely on a duration (seven days) but rather on the qualitative elements of such short-term debt. The definition should be restricted to partially funded, revolving or other open lines of credit necessary for the continuation of the operations essential to the financial institution, as in the US framework.*

Reduced discretion of the bail-in rules

Part I of our report identified two discretionary elements in the EU framework which, in our view, may lead to higher costs for the public sector and to an increase of the legal uncertainty:

- **Precautionary recapitalisation.** The discretionary character of the state aid framework could lead to a loss of credibility of Pillar 2 of the Banking Union, whereby public sector funds would be granted to failing financial institutions to avoid the use of the bail-in tool. This discretion is due to the fact that the condition of granting is defined in a broad manner: *"in order to remedy a serious disturbance in the economy of a Member State and preserve financial stability".*
- **Application of the bail-in exemption.** The discretionary character of the bail-in exemption is due to the wording of Article 44 Section 3 BRRD, which does not rely on the characterisation of the exempted debt, but rather on general expressions such as *"reasonable time"*, *"achieve the continuity of critical functions"*, *"serious disturbance to the economy of a Member State or the Union"* and *"destruction of value"*.

A feature that is common to both of the above exemptions is the reliance on the concept of "financial stability". We understand that the concept of "financial stability" is not defined in the US or the EU resolution frameworks. Such a definition could contain quantitative (e.g. market indicators) and qualitative (e.g. overall gridlock on the refinancing sources) elements. Currently, the term "financial stability" is broadly used in both resolution frameworks. This gives huge power of interpretation to the resolution authorities. While we note that such room to play is necessary in a crisis scenario to ensure adaptability and flexibility in the decision-taking process, such a broad power of interpretation in the case of the precautionary recapitalisation measure may lead to the misuse of public funds. We make the same observation for the bail-in exemption, where a broad definition may lead powerful creditors to put the resolution authority under pressure to obtain an undue exemption from the bearing of losses principle.

Based on these considerations, we make the following proposals:

- **Proposal 14:** *Submit the granting of a precautionary recapitalisation to stricter conditions, including the fulfilment of quantitative and qualitative elements, to avoid discretionary use of the public sector funds before the opening of a resolution procedure.*
- **Proposal 15:** *Limit the bail-in exemption to clearly defined categories of debt with no playing-room granted to the resolution authority.*

Creation of a privilege of new money

We noted that, in the BRRD and in the DFA resolution frameworks, creditors do not play an important role in the resolution procedures. The resolution authority has the overall responsibility for determining the content of the restructuring or of the liquidation plan, and also approves it. We understand that this particularity of the resolution framework compared to normal insolvency law arises from the need for an efficient resolution within a short timeframe and in the public interest. However, the resolution rules do not contain additional requirements relating to the granting of a privilege of new money during the winding-down or restructuring of the failing financial institution.

The application of the privilege of new money, as defined in Chapter 11 of the US Bankruptcy Code, to various companies shows the economic efficiency of such a privilege to ensure an orderly deployment of the insolvency proceedings without additional destruction of value of the enterprise. In particular, the case of Lehman Brothers shows that such a privilege leads to economic efficiencies for the resolution of a financial institution. Before the opening of Chapter 11 against Lehman Brothers, creditors refused to grant additional liquidity facilities to the failing investment bank. However, immediately after opening the Chapter 11 insolvency proceedings, Barclays (a third party) agreed to grant a revolving credit line of \$450 million to Lehman Brothers based on the seniority granted to additional liquidity facilities after the opening of the insolvency proceedings.⁴¹

It is important that the privilege granted to a third party or to an additional creditor is clearly defined in the law, so that the liquidity provider can transparently assess the ranking of its claim in the resolution procedure. Transparency and super-seniority of additional liquidity facilities lead to higher refinancing capacities of the failing financial institution, to reductions in the cost to the public sector, to the avoidance of enterprise's destruction, and to a smooth functioning of the financial markets on the Monday following the opening of the resolution procedure. Moreover, in the case where public back-stop facilities are granted by a central bank or by the state, such a privilege grants a high protection of the public funds and ensures the reimbursement of the additional facilities granted before all other creditors.

- *Proposal 16: Amend the resolution framework to add a privilege of new money with a clear privilege in the claim ranking hierarchy given to the creditor granting a new liquidity facility during the resolution procedure. The definition of the privilege of new money should be as wide as possible to include private sector support as well as public back-stop facilities, and should be comparable with the privilege of new money in Chapter 11 of the US Bankruptcy Code.*

Conclusion

Moving from bailouts to bail-ins is difficult but necessary. The new European resolution framework represents a vast improvement on the ad-hoc process that prevailed before and during the crisis. Overall, we are cautiously optimistic about the future of bail-in in Europe. The main issue is the transition from the old regime to the new one. For several years to come, the new resolution tools will have to be applied to balance sheets that are not quite ready for it. This is bound to create bitter legal and political fights. But the evidence suggests that bail-in can work – in fact, it is already producing significant changes in some dimensions – and with the help of hard-headed policymakers, it can become credible and effective.

⁴¹ "Lehman Brothers Bankruptcy News", 20 September 2008 (<http://bankrupt.com/lehman5.txt>).

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The report ends with a number of policy recommendations concerning governance, stress testing, cross-border issues and resolution of financial contracts.

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