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# THE EU BANK INSOLVENCY FRAMEWORK: COULD LESS BE MORE?

by Giovanni Majnoni[*], Gabriele Bernardini[†], Andreas Dal Santo[‡] and Maurizio Trapanese[§]

## Abstract

The framework for bank crisis management in the Banking Union (BU) complies with multiple criteria. Each of these criteria is based on a sound policy rationale; however, when combined, they can generate unintended consequences that undermine the effectiveness of the system, highlighting a case of fallacy of composition. This paper suggests that a piecemeal reform is not adequate to tackle the framework's shortcomings. A broader effort is required to streamline the current criteria into a single rulebook, achieving effectiveness through simplification. The successful experience of the US framework for bank failure management provides a useful benchmark. It shows that the generalized, if not exclusive, reliance on a single, clearly defined, easily measurable and quickly actionable criterion – the Least Cost Test – makes it possible to offer full protection to taxpayers and to contain the destruction of value caused by bank failures, thereby safeguarding the economy. We suggest that its adoption by the BU would help to frame a common approach to failing banks of all sizes and would provide a unifying force and a solution to the geographic and institutional fragmentation of the current set-up.

**JEL Classification**: F53, G01, G20.
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*"Less is more"*
Ludwig Mies van der Rohe

## 1. Introduction. *

In the first years of its life, the European Union (EU) framework for bank crisis management has not prevented the use of fiscal resources, nor has it achieved a fast and smooth resolution of small and medium-sized banks. This has spurred a call for action. In a November 2019 Financial Times op-ed, the German Vice Chancellor and Federal Minister of Finance Olaf Scholz argued that as a first step toward completing the Banking Union "we need common insolvency and resolution for banks, building on the example of the US Federal Deposit Insurance Corporation (FDIC) … making instruments that have proven useful to large banks available to small banks too".[1] Expanding on this recommendation and using the defining features of the FDIC experience, we lay out a path to transform the current segmented EU insolvency and resolution procedures into an integrated framework, able to deal with failing banks of all sizes in a timely manner and at a minimum cost.

The strategy proposed by this paper is to reverse-engineer the US approach. Since its inception, the FDIC was granted responsibility over both deposit insurance and bank resolution. Thanks to this concentration of responsibilities, it has been able to refine its successful bank resolution techniques over time. We suggest to follow the process in reverse by importing some of the most successful features of the FDIC procedures into the EU framework, using them as a tool to remove the fragmentation and rigidities of the current set-up and to promote growing integration between the institutions at the centre and at the periphery of the Single Resolution Mechanism (SRM), as well as between institutions in charge of deposit insurance and of bank crisis management.

The Banking Union (BU) framework for bank crisis management has at least four different criteria for establishing how to resolve and fund the winding down of a failing institution – three explicit (the presence of public interest, the presence of public funding, the compliance with the financial cap) and one "implicit" (the size of the bank) – while the FDIC only has one: the Least Cost Test (LCT). The decision concerning the liquidation or resolution of any given bank in the BU requires the coordination of different authorities – the Single Resolution Board (SRB), the National Resolution Authority (NRA), the national Deposit Guarantee Scheme (DGS), the EU Commission, through the DG Competition, the EU Council, and the national government – while in the US coordination with banks' licensing authorities is centralized with the FDIC and interventions are undertaken by the FDIC's departments tasked with bank resolution and the insurance fund.

It is largely acknowledged that the decision-making fragmentation of the BU framework is a major weakness, which must be overcome. What is missing is a criterion to steer the necessary institutional simplification. We suggest that the FDIC's LCT can provide such a driving criterion. The joint involvement of so many institutions and principles in EU bank resolutions can be attributed to the commitment of all EU institutions – the Commission, the Parliament, the Council, and the ECB – to offer their contribution to prevent the repetition of the bank-sovereign vicious circle that triggered the European sovereign debt crisis and motivated the establishment of the BU. All possible ammunition was deployed toward that end and all the criteria for bank resolution in one way or another responded to that ultimate objective. Even antitrust legislation was mobilized to support banking authorities in the attainment of that goal.

* This paper builds on the companion paper "The FDIC bank crisis management experience: lessons for the EU Banking Union" by G. Majnoni, A. Dal Santo e M. Maltese (August 2020). Useful comments and fruitful discussions on a previous draft were provided by Fernando Restoy (BIS Financial Stability Institute), Arthur Murton and Joanne Fungaroli (FDIC), Nicolas Veron (PIIE and Bruegel) and Enzo Serata (Bank of Italy). Any errors and omissions remain the authors' responsibility alone. The opinions expressed here are those of the authors and do not necessarily represent the views of the Bank of Italy.

[1] Scholz (2019).

Unfortunately, the joint implementation of multiple policy actions, each with its own sound policy rationale, seldom leads to the intended outcome. The fallacy of composition often prevents the results of individual measures to simply add up and turns well-intentioned actions into undesirable outcomes.

These considerations suggest two important elements. First, that the FDIC's Least Cost Test is well aligned with the EU goal of taxpayer protection from the bank-sovereign "doom loop" and it could prove effective at preventing the use of public money for bank resolutions in the EU as it has in the US. The second is that the current malfunction of the BU resolution mechanism should not be attributed to glitches in its individual components. Even if each component were working perfectly, the outcome could still be dysfunctional. The fallacy of composition problem indicates that there is no point in fine-tuning or restructuring the individual components of the BU framework. What is needed is a reform of the current framework that streamlines the current criteria into a single rulebook and reduces the number of institutions that have a say in individual bank resolution operations.

Such an approach is definitely ambitious and its pursuit fraught with difficulties. However, the path towards a new and more effective framework – one based on a single rulebook and with procedures that are sufficiently flexible, but linked to clearly defined, easily measurable and quickly actionable criteria – does not require us to move into uncharted territories or untested regulatory propositions. The FDIC experience, tested in over 3,500 bank interventions in the last forty years, provides probably the most robustly tested benchmark that one could find in the domain of bank regulation worldwide.[2]

The identification of a reform path for the EU bank resolution framework, aimed at improving its effectiveness through simplification and inspired by the US experience, is the subject that this paper addresses and the task to which we now turn. However, before getting started, we would like to clarify two terminological issues, which could otherwise be a source of confusion when comparing bank insolvency frameworks on the two sides of the Atlantic. The first has to do with the notions of bank "insolvency" and "resolution". In the EU, "resolution" and "insolvency" are conceptually distinct, subject to different frameworks and apply to two mutually exclusive set of banks while in the US, both "resolution" and "liquidation" are included in a single bank insolvency framework that offers both resolution *and* liquidation tools to all banks.[3] The second, has to do with the distinction between principles and tests/assessments in the management of bank insolvency frameworks. Principles identify goals underlying the policy framework: they are of a general nature and therefore not easy to measure in a timely or uncontroversial way. Tests, instead, are measurable propositions designed to confirm/deny the pursuit of general principles. In the US "public interest" is an underlying principle of the bank resolution framework, while the Least Cost is a test (LCT) instrumental to the pursuit of the general goal of public interest. In the EU, instead, public interest is both a principle and a test (the Public Interest Assessment,

[2] The FDIC inherits part of this experience from the Federal Savings and Loan Insurance Corporation (FSLIC) and the Resolution Trust Corporation (RTC), a temporary federal agency created by the Congress to clean up the savings and loan (S&L) crisis of 1980-1994 after the FSLIC fund became insolvent. During the S&L crisis, 1,617 federally insured banks with $302.6 billion in assets were closed or received FDIC financial assistance, while 1,295 failing depository institutions with $621 billion in assets were managed by the FSLIC (550) or the RTC (745). When the RTC was closed in 1995, its remaining assets and liabilities were transferred to the FDIC. See FDIC (1998).

[3] As a result, while in the EU the term insolvency refers exclusively to piecemeal liquidation with deposit insurance providing only deposit payouts, in the US it refers to both liquidation and resolution procedures with deposit insurance able to fund both deposit payouts and Purchase and Assumption (P&A) operations. See Deslandes et al. (2019), p.2 and Gelpern and Veron (2019), p.10.

PIA). Therefore, while the two frameworks share common underpinnings, their operational efficiency and effectiveness are likely to differ as they rely on different tools.

## 2. The FDIC recipe for success: three combined functions and a single rulebook

The US Federal Deposit Insurance Corporation (henceforth, the FDIC or the Corporation) has distinctive features that need to be stressed in the context of this paper. Since its establishment in 1933, the law granted the FDIC three key regulatory functions:

1. banking regulation and supervision of Insured Depository Institutions (IDIs) together with other Federal or state authorities, as applicable;
2. management of the bank deposit insurance fund;
3. resolution and receivership of failing IDIs.

The latter function was extended under the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA) to include responsibility over the development and implementation of the framework for the resolution of large and complex financial institutions. It is noteworthy that these three functions – corresponding to the three pillars of the EU's BU – are carried out in one single institution even if bank supervision is shared with the Federal Reserve, the Office of the Comptroller of the Currency (OCC), or state supervisors, depending on the bank's license. As of 30 June 2020, the Corporation guaranteed the deposits of 5,075 credit institutions worth $8.8 trillion or 56 percent of total US domestic bank deposits (Table 1). Out of this total, $2.5 trillion, or 29 percent of total US insured domestic deposits, belonged to IDIs with less than $30 billion of total assets. At the same date the pool of resources available for deposit payoffs represented by the Deposit Insurance Fund (DIF) amounted to $114.7 billion (or 1.30 percent of insured deposits), with a US Treasury backstop of $100 billion represented by non-interest bearing lines of credit, among other means of obtaining DIF financing.[4] In the last forty years, the FDIC has managed the resolution of about 3,500 banks, consistently protecting insured deposits and – in 59 percent of cases – also uninsured depositors, and addressing the needs of medium to small banks, with about 90 percent of the resolutions referring to banks with assets below $1 billion.

The remarkable results achieved by the FDIC in over 85 years of history are the consequence of its ability to adapt strategies and operations to changing external conditions, learning from practice and experience and contributing to the refinement of a regulatory framework aimed at protecting the economy and the public budget from the shocks of bank failures.[5] What makes the FDIC lessons of particular interest is the pursuit with equal determination of the protection of the economic environment and of the public budget from banks' failures of all sizes, from industry giants to small banks affecting the national economy or the economic activity of local communities. The last forty years have been a period of intense change, in particular following the Saving & Loan Association (S&L) crisis of the 1980s and the subprime crisis of 2008. Over this period, as Congress consolidated the resolution powers in the hands of the FDIC, the Corporation did continue enhancing and simplifying its intervention strategies while increasing their efficiency and effectiveness. In the context of this paper, it is useful to observe the shifting balance in the use of its two main tools of intervention: liquidation versus resolution through Purchase and Assumption procedures.

[4] The DIF has the ability to raise additional funding by increasing regular assessments, imposing special assessments, or collecting prepaid assessments.

[5] For an example of this never-ending learning process, see FDIC Staff Report No.2020-05, pp.19-24.

*Liquidation vs. resolution: a decades-long search for an efficient bank crisis management framework*

Even if the FDIC has used several methods to manage failing banks since its inception, operational and legislative innovations have narrowed them down to two main procedures – Liquidation or Purchase and Assumption (P&A) – with a shifting emphasis over time between the two, as a result of regulatory changes and evolving concerns for the damage that bank failures cause on public finances and on the economic environment in which failing banks operate.

Starting in the mid-1960s, the FDIC's preference began to shift from liquidation to P&A; since then, the FDIC has invested in resources, including technology, and adapted its processes and procedures to increase the effectiveness and efficiency of the P&A, whereby assets and liabilities of the failed bank are purchased by the Assuming Institution (AI). The S&L crisis in the 1980s accelerated the transition from liquidation to P&A to avoid, among other things, steep increases in future administrative costs caused by the great upsurge in the volume of assets held in receivership.[6] As illustrated in Table 2,[7] the trend continued during the subprime crisis, when two additional factors were at work, namely the National Depositor Preference and the temporary increase in the ceiling of insured deposits from $100.000 to $250.000, which was subsequently made permanent by the DFA in 2010.[8]

Of the 2,320 banks that failed during the S&L, 645 required direct payment of deposit insurance from the DIF, while 1,675 required some type of P&A. Consistent with the characteristic of the S&L crisis, the large majority of the failed banks – 2,189 out of 2,334 – had assets smaller than $1 billion. For banks with assets between $1 billion and $30 billion, Table 2 shows a stronger preference for P&A over direct payment of deposits than for smaller banks.[9] During the subprime crisis, excluding 26 small IDIs with total cumulative assets of $16 billion, almost all failing banks were resolved using P&As (462 banks). FDIC statistics show that the majority of these resolutions were P&As with loss-share (304).[10]

Interestingly, the costs of different types of interventions in the two sub-periods displayed certain regularities and trends. Table 3 shows the cost of P&A and liquidation for the DIF during the two crises. The two periods considered in the table are not homogeneous due to the different number of failed banks, the dissimilar length of the two crises and the FDIC's different tools, experience and responsibilities. With that in mind, the table shows that in both crises, P&A loss rates – represented by the ratio of intervention

[6] Bovenzi (2015) noted that managing the assets of failing banks could be a source of political pressure and reputational damage for the FDIC: asset management "never produces many friends" because it "assured screams of protest by the borrowers to their elected officials".

[7] The table is built using FDIC data as of 30 June 2020. It does not include other types of resolutions, such as Assistance or Repurchase Transactions, which were used extensively during the S&L crisis.

[8] At the end of 2007, the FDIC's resolution function had 218 staff members, a fraction of the 7,000 staff it had at the end of 1992.

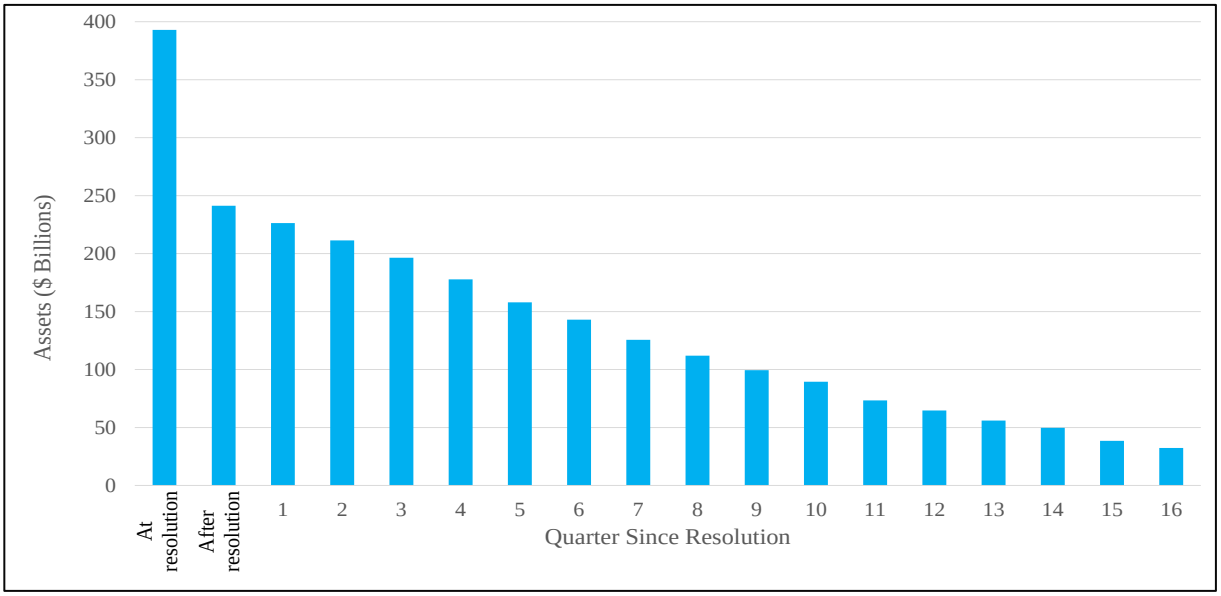
[9] The importance of P&A is documented by the frequency of this resolution method in the S&L crisis, during which the FDIC resorted to P&A more frequently than the FSLIC, as indicated in the note to Table 2. Although the difference of intervention practices is consistent with FDIC policy preferences, it may also have been caused by different characteristics of the IDIs for which we have not been able to control.

[10] FDIC, Crisis and Response, p.200. In general, P&As without loss-share are used for small banks. The FDIC used P&A with loss-share for the first time in 1991 and used it sparingly during the S&L crisis. During that crisis, the FDIC discovered that P&As with loss-share resulted in a lower cost of resolution compared with similar banks that were resolved using P&As without loss-share. The FDIC estimated the cost advantage to be between 4.4 percent and 11 percent of the total assets of the failed IDI, with banks with assets lower than $500 million scoring better in term of percentage cost advantage (FDIC, 2020, p.29).

costs to banks' total assets – were lower than the corresponding liquidation loss rates (IDT and Payout/DINB). The data for the second period are affected by the presence of Washington Mutual, by far the largest intervened institution. Net of Washington Mutual, the total loss rates are higher than in the first crisis, as should be expected in conjunction with the more than doubling of the deposit insurance ceiling during the global financial crisis (GFC).

Table 4 breaks down the loss rates of P&A and liquidation for the DIF by size of intervened banks and allows for a comparison of the efficiency of the two procedures.[11] We observe that the greater cost efficiency of P&A over liquidation is general and holds for banks of all size. The difference between the average loss rate of liquidation and of P&A (loss gap) is systematically positive – for weighted and unweighted averages – across IDIs regardless of their size and – what is interesting in view of the BU preference for liquidation of small and medium-sized banks – it reaches a maximum for the smallest banks with less than $100 million in total assets. In addition to cost efficiency, operational efficiency – measured by the time required for asset disposal – also seems to benefit from a switch from deposit payout to P&A. Charts 1 and 2 compare the assets at resolution and the progressive reduction of assets in receivership over time during the S&L and the subprime crises. The charts show that during the subprime crisis – when P&A was largely predominant – the FDIC was both more effective in passing assets to the assuming institution and faster in disposing of the retained assets than during the S&L crisis.

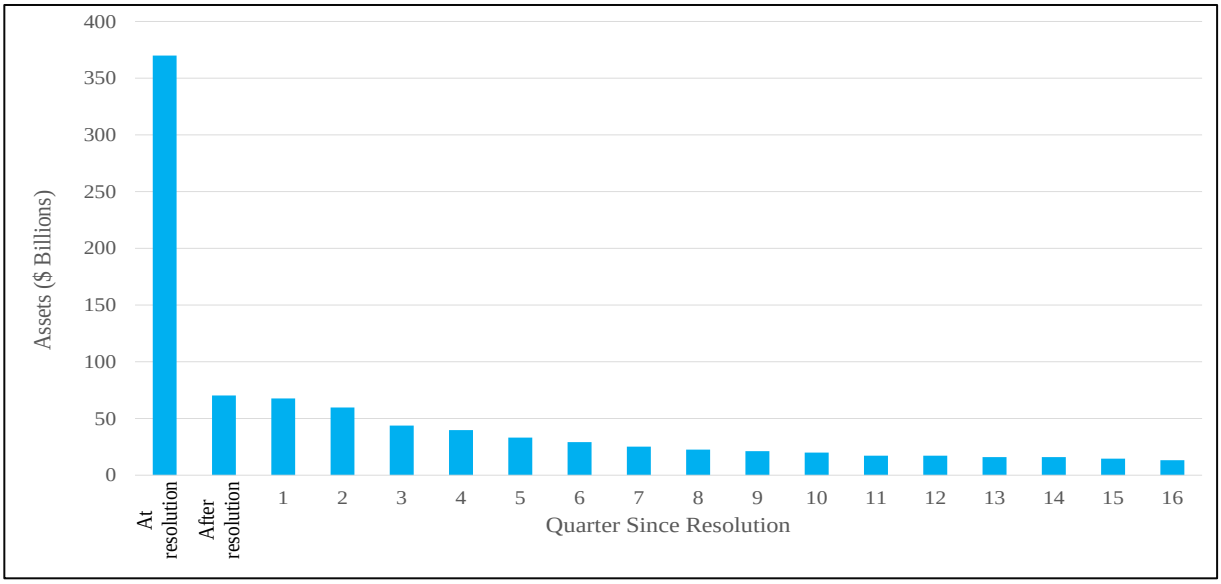
**Chart 1 – Outstanding Asset Balance Over Life of Receivership (1986-1994)**




*Source: FDIC*

[11] Our loss rates show some variance with those reported by the FDIC. This could be due to differences in the timing of data extraction or the method used. The variance is limited and does not have a material effect on our conclusions.

**Chart 2 – Outstanding Asset Balance Over Life of Receivership (2008-2012)**




*Source: FDIC, excludes Washington Mutual.*

*The single rulebook: three key components*

Let us now focus on the regulatory developments that have assisted the evolution of the US bank crisis management framework between the S&L crisis and the GFC and that help to explain the developments that we have just highlighted. The most remarkable achievement of the three key regulatory developments that we are going to review briefly is that they succeeded in establishing a *single rulebook* for US bank crisis management.

The rulebook is *single* because (i) it is shared across different bank supervisory authorities (the Fed, the OCC, and the FDIC), (ii) it is valid throughout the US, (iii) it is the exclusive insolvency regime for IDIs, (iv) it rests on a *single* efficiency criterion, whose effectiveness has been successfully tested for almost thirty years and ensures clarity of interpretation, accountability, speed of action and – most importantly – an effective combination of cost minimization and protection of the level of economic activity.

The turning point in the definition of current FDIC policies was the Congressional approval of the FDIC Improvement Act (FDICIA) in 1991 and of the National Deposit Preference in 1993. The FDICIA, based on the experience gained during the protracted S&L crisis, introduced the two key pillars of the US framework for banks resolution: Prompt Corrective Action (PCA) and the Least Cost Test (LCT).

***Prompt Corrective Action (PCA)***. Prompt Corrective Action represents to this day a cornerstone of bank supervision at a global level. The introduction of a structured bank rating procedure helped to anticipate the detection of fragile banks and introduced a shared methodology among different bank supervisors, thereby ensuring a coordinated pre-crisis approach among the FDIC, the Fed and the OCC. PCA provides early indications of stress in the banking system, allowing the FDIC to prepare a response to bank crises.

In particular, to help the FDIC to devise the least cost solution within a short time span – the 90 days between when an IDI is declared critically undercapitalized and its liquidation – the FDICIA introduced a system of early warnings that could a) help the FDIC to prepare in advance for the resolution of banks in

distress and b) put pressure on chartering authorities to revoke bank licences well before the franchise value was wiped out and resolution costs spiked.[12]

A telling if incomplete indicator of the importance of early detection is the fact that out of the 1,792 problem banks in the period January 2008-March 2017 (those rated 4 or 5 on the CAMELS rating scale), almost half (854) returned to good standing. Of those that could not get back on their feet, 532 were resolved, 292 were either merged into or acquired by another entity without FDIC intervention, and only 112 were still problem banks as of March 2017.

***The Least Cost Test (LCT).*** The FDICIA second pillar – but the one that in fact defines the whole US bank insolvency framework – is the Least Cost Test, the rule that requires the FDIC to compare the "cost of liquidating the failing financial institution to the cost of bids received from other interested institutions" and choose the one that results in the lowest cost to the DIF.[13] Losses for the DIF include any immediate and long-term obligation and any direct or contingent liability for future payment by the FDIC in connection with the acceptance of such bid. According to the LCT, the selected procedure must be the *least costly* to the DIF of *all* possible methods, including the net cost of liquidation represented by the deposit payouts less the revenues from subsequent asset liquidation. Before the FDICIA, the FDIC could choose among bids that were *less costly* than the liquidation based on factors such as the availability of local banking services. FDICIA ruled out these additional criteria, making the LCT *the* criterion for choosing the type of resolution method.[14]

To apply the LCT, the FDIC has to make an accurate estimate of the asset liquidation value of the failing institution. Through a process called the Asset Valuation Review (AVR), the FDIC compares the book value of loans with the estimated recovery value.[15] At the same time, the FDIC collects bids for the failing institutions. Each bid has two components: (i) a bid amount for the insured deposits or all deposits, whatever the case may be; and (ii) a bid amount for the assets of the failing institution. For each bid, the FDIC calculates the total receivership loss based on this simplified formula:[16]

*1) Total Receivership Loss = Total Gross Assets – Asset Losses – FDIC Receivership Expenses +*

*+ Deposit Premium and/or (Asset Discount) – Claims on Receivership*

Then, the minimum Total Receivership Loss is compared with the Total Receivership Loss Under Liquidation to choose the resolution method that is the least costly to the DIF.

Considering that in the case of very large and complex bank failures the LCT could not be performed quickly and reliably, FDICIA allowed for it to be bypassed in exceptional circumstances under the Systemic Risk Exception (SRE) clause. However, a very high standard was set for the FDIC to be allowed to follow this alternative route, requiring that the SRE be approved by two thirds of both the FDIC Board of Directors and the FED Board of Governors and by the Secretary of the US Treasury, after consultation with the

[12] FDIC (2020), p.17.
[13] FDIC (2014), p.12.
[14] FDIC (2020) notes that "[t]here are two exceptions [to the LCT]. First, the FDIC is always permitted to pay out the deposits of a failed bank. Second, under extremely limited conditions, the FDIC can invoke an exception if the least cost failure could threaten the US financial system. In addition, the FDIC is not required to consider a bid if it is unable to estimate its cost or if the resulting institution is viewed as unsafe and unsound".
[15] The FDIC estimates the asset value either internally or by outsourcing the calculation to third parties.
[16] FDIC (2014), p.13.

President. These conditions have been met only once, at the onset of the GFC, when the SRE was approved in order to launch, in October 2008, the Temporary Liquidity Guarantee Program (TLGP), which extended FDIC coverage to all transaction accounts and to newly issued debt of Bank Holding Companies.

***National Depositor Preference (NDP).*** The third and final ingredient in the US recipe for dealing with distressed banks is National Depositor Preference, which was not introduced by a Banking Law but was instead passed into law as part of the Omnibus Budget Reconciliation Act of 1993. While passed as a budget matter, some proponents at the time argued that depositor preference would put the FDIC in a better financial position after the dramatic S&L experience of the previous decade. From 1935 until NDP was introduced, the claims of depositors and other creditors were ranked equally under liquidation.[17] Under NDP, insured and uninsured deposit claims are considered on the same footing, but with a preferred status with respect to the other creditors. NDP provides for the following order of priority under liquidation:

1. Secured claim (subject to collateral test)
2. Administrative expenses
3. Domestic deposit liabilities
4. Other general, senior, or subordinated liabilities of the institution
5. Shareholder claims

The introduction of NDP had important ramifications for the FDIC and its bank crisis management. It swept away the fragmented system of priority for depositors mandated by state laws that, for the majority of states, gave deposit claims the same priority as general creditors.[18] NDP levelled the playing field for depositors, provided greater predictability in recovery rates, and reduced costs for the FDIC, paving the way for its greater reliance on P&A procedures. It is important to note that before NDP and the earlier pro rata policy were introduced, P&A was used extensively. According to our estimates, of the 682 IDIs resolved from the start of the S&L crisis to 1987, 452 were resolved using P&A.

*The additional Dodd-Frank Act provisions*

The Dodd-Frank Act (DFA) extended the powers of the FDIC to include a new, significant dimension – which will not be discussed here as it is unrelated to small and medium-sized banks – i.e. the management of troubled bank holding companies and systemically important financial institutions (previously assigned to the Fed) through a specific procedure, the Orderly Liquidation Authority (OLA), and a dedicated fund, the Orderly Liquidation Fund (OLF). Importantly, the DFA also adopted statutory requirements applicable to some of these institutions to conduct resolution planning under the US Bankruptcy Code, which is administered jointly by the FDIC and the Federal Reserve. The consequence of this over the last decade has been enhancements by firms in order to be able to file for bankruptcy, rather than being resolved using the OLA. With the DFA, the FDIC has become the go-to resolution institution for US banks and

[17] Marino (1999) notes that as early as 1988 the FDIC had already devised a way to treat depositors differently from the rest of the creditors of a given class of equity (pro rata policy), paving the way for greater use of P&A. A pro-rata policy states that under the P&A the FDIC should treat depositors and creditors equally up to the amount that the non-deposit creditors would have received in liquidation. In 1988, the FDIC concluded that the pro rata policy was superior to depositor preference. The following year, the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) gave the FDIC explicit power to apply the pro rata policy.

[18] FDIC (1998), p.55.

financial institutions of all sizes, with the only exception of credit unions, which remain regulated and supervised by the National Credit Union Administration (NCUA).

The DFA revised the statutory authority of the FDIC regarding the administration of the DIF, raising the minimum Designated Reserve Ratio (DRR) to 1.35 percent, removing the upper limit on the size of the DIF, allowing the FDIC to set the contribution to the DIF above the maximum required, and granting it the power to use its own discretion in suspending the distribution of dividends back to the IDIs. The FDIC exercised this power by suspending dividend distribution indefinitely and prescribing decreasing assessment rates as the DRR reached certain thresholds. This innovation is relevant as it allows the FDIC to avoid DIF depletion both by containing intervention costs and by allowing revenue management across the credit cycle.[19]

In 2008, to strengthen trust in the US banking system, the deposit insurance limit was raised to $250,000, from $100,000, and deposit insurance was temporarily extended to uninsured non-interest-bearing transaction accounts. The DFA permanently increased the standard maximum deposit insurance amount to $250,000, significantly reducing the amount of uninsured deposits. The losses imposed on uninsured depositors fell to 6 percent from 2009 to 2013, compared with 65 percent in the period between the introduction of the FDICIA and the subprime crisis.[20]

## 3. The EU framework for bank crisis management and the fallacy of composition

The EU framework for crisis management complies with multiple criteria, defined both at the supra-national and domestic level. Each of them has been provided with a sound policy rationale; however, in combination, they have the potential to generate unintended consequences that can undermine the effectiveness of the whole system.[21] The problems faced by the EU framework in its first years of application may, therefore, be interpreted as a case in which the introduction of new regulatory measures fell prey to the fallacy of composition. The vast majority of academic scholars and market participants tends to believe that this framework is far from being able to deliver the desired outcome, in terms of reducing the cost of banking crises and their impact on taxpayers. At the institutional level, several initiatives have been undertaken in order to address the shortcomings of the current system,[22] with full awareness of the complexity of the task at hand.[23]

In keeping with our diagnosis that the problems of the framework are not necessarily rooted in its individual components but rather originate from the unintended consequences of their joint

[19] Before the DFA, the FDIC could undergo open bank assistance (OBA) interventions to support IDIs that were in danger of failing, although not yet technically failed, using several tools including loans, contributions, and deposits. Although this option was no longer in use after 1992, the OBA resurfaced again in 2008 when it was employed with Citigroup and Bank of America. The DFA eliminated this option altogether. FDIC (2014), p.20.

[20] FDIC (2020), p.26.

[21] Restoy et al. (2020).

[22] An assessment of the state of play in the application and completion of the EU resolution framework can be found in the EU Commission Report (2019). For an overview of the main initiatives in place at the EU level for the completion of the BU, see Deslandes et al. (2019). It is worth recalling here that in December 2019 a proposal from the German Finance Minister tried to overcome the stalemate within the legislative process for the establishment of the so-called third pillar of the BU, namely the creation of the EU deposit guarantee system.

[23] Schnabel et al. (2018) and Restoy (2016).

implementation, we focus on three areas where the combination of individually sound elements can lead to undesired effects:

- the first area pertains to the *plurality of rulebooks* for crisis management currently in place in the EU; large banks have one set of EU rules, whereas the remaining institutions are under different nationally based regulatory systems. While the distinction in principle is clear, its implementation has revealed large grey areas where different rulebooks coexist, leaving unclear which rules apply.
- The second area relates to the unnecessary strains caused by the *rigidity of existing procedures,* the resulting lack of discretion embedded in the crisis management process, and a narrower set of options available for small and medium-sized banks.
- The third element is the *reliance on policy criteria that leave wide room for subjective interpretation*; even when there is no ambiguity concerning which rulebook applies, outcomes remain highly uncertain due to the reliance on criteria open to multiple interpretations (as is the case for the notion of state aid during times of financial distress and for the notion of public interest).

The combined effect of these shortcomings generates a high level of uncertainty and deprives the framework implementation of its effectiveness.

*Plurality of rulebooks*

The EU framework for the management of banking crises is composed of two distinct regimes aimed at addressing differently banks with a systemic impact versus those whose failure is unlikely to affect financial stability. Each regime pursues its own specific goals and is governed by different rules, the implementation of which is in the remit of several authorities located at both EU and national level.[24] In the current practice, the two regimes are referred to as the "resolution regime" on the one hand and the "insolvency regime" on the other. The first one – established at the supra-national level – is reserved for the largest banks; the second one – mainly based on national rules – is for the majority of Member States the only option for dealing with the thousands of medium to small size banks.[25]

The *resolution framework* is aimed at avoiding the systemic implications arising from the failure of large banks, mainly through constraining the possibility of public support and of imposing losses on the private sector (i.e. the shareholders/creditors of the banks concerned), while safeguarding the essential functions performed by these intermediaries in the interest of the economy.[26] Banks can enter resolution if they

[24] The main aspects of the EU system for crisis management are outlined in IMF (2018) and Philippon et al. (2017).

[25] This distinction between the resolution and the insolvency regimes as we find in the EU is less evident in other jurisdictions. In the US – as we have seen – but also in Switzerland and Brazil the resolution authority is also responsible for insolvency. See Baudino et al. (2019).

[26] The resolution regime is based upon the EU Bank Recovery and Resolution Directive (BRRD) and the Single Resolution Mechanism Regulation (SRMR) and is operationalized by the Single Resolution Board (SRB). The BRRD applies to the EU Member States and the other countries belonging to the European Economic Area (EEA), namely Iceland, Liechtenstein and Norway. The SRM applies to the countries of the BU and is composed of the SRB and the national resolution authorities. Bulgaria and Croatia have started the process for entering the euro area, which implies first joining the BU on a voluntary basis under the close cooperation procedure as defined in the Single Supervisory Mechanism Regulation (SSMR). The SRB manages the Single Resolution Fund (SRF), which is financed by levies on banks collected by national resolution authorities. The SRF is established under the SRMR, but its operation and the mutualization of national funds are contained in the Inter-Government Agreement (IGA). The process of mutualization of national funds is supposed to be completed by 2024, along with the backstop to the SRF by the European Stability Mechanism (ESM). The direct scope of the SRB includes all euro-area banks with more than €30 billion of total assets, plus a few other institutions whose size is affected by their cross-border dimension.

are declared "Failing or Likely to Fail" (FOLF) and pass the Public Interest Assessment (PIA), a test whose features are defined in the EU legislation only in general terms.

This rigidity of application interacts with the lack of a common standard across countries. Banks deemed to be failing or likely to fail that do not meet the public interest test fall under the *insolvency regime* of the EU Member State in which they are domiciled.[27] These national regimes show crucial differences, with the potential to create inefficient outcomes and lengthy procedures.[28]

According to the available surveys, some regimes are governed by rules addressing the specificities of banking activities (Italy, Greece, Luxembourg, Slovenia), while in other countries banks are dealt with the ordinary insolvency regimes established for corporates (France, Germany, Spain). In some cases, the insolvency proceeding is conducted by an administrative authority (Greece, Italy, Slovenia), whereas in other countries the regime is court-based (France, Germany, Ireland, Luxembourg, Spain). Moreover, national rules show a different distribution of power among the many actors that intervene in a banking crisis (regulatory authorities, deposit guarantee schemes, creditors). Divergences emerge also in reference to creditor hierarchies, criteria for determining insolvency, and access to external or public support.

As a result of the different rulebooks guiding the bank insolvency framework at EU and national level, a given bank or the customer of that bank can be exposed to several potential inconsistencies in the way they are treated. The sound policy rationale of addressing differently banks failures with and without systemic implications has therefore unintentionally become a source of uncertainty in the implementation of the policy framework. For example, national insolvency procedures are often based upon balance sheet insolvency or failure to meet financial obligations. For this reason, it is possible that a bank considered FOLF by the European Central Bank (ECB) may not meet the public interest threshold and may be subject to a national liquidation procedure. However, if the same failing bank does not meet the conditions for insolvency under national rules, it may end up in a limbo where no legal procedure is available to manage its failure.[29]

Similarly, the high degree of variability in important aspects of national regimes can also make the "No-Creditor-Worse-Off" (NCWO) criterion very difficult to implement across jurisdictions.[30] In fact, different insolvency rules could imply different approaches to bail-ins depending on the failing significant bank's country of incorporation.

*Rigidity of procedures*

We concentrate on two main areas of rigidity: the assignment to DGS of a pay-box role and the implementation of bail-in provisions in resolution proceedings. On the first point, we observe that the 2014 Deposit Insurance Schemes Directive (Directive 2014/49/EU) does not constrain the Deposit

[27] These banks represent the vast majority of banks operating in the BU. Based upon the data at the end of 2018, more than 2,900 BU banks out of a total of about 3,000 fall in this category. See De Aldisio et al. (2019).

[28] For an overview of the main features of the national insolvency regimes, see Baudino et al. (2018); these authors review Greece, Italy, Ireland, Luxembourg, Slovenia, the UK and a number of non-EU jurisdictions, including the US. Restoy (2019) adds France, Germany and Spain to the analysis. See also Binder et al. (2019); these authors mainly study the systems in place in the US, UK, Spain and Germany.

[29] For these considerations, see Restoy (2019).

[30] The NCWO criterion entails that creditors in resolution should not support losses that are larger than those emerging from a liquidation procedure, which is run in accordance with national rules.

Guarantee Schemes (DGSs) to fund only deposit payouts, but allows for early intervention to prevent a bank's failure or for some bank resolution measures, such as the transfer of deposits from a failing bank to another bank. However, two important provisions of the BRRD have introduced a significant element of rigidity in the DGS deployment in support of failing banks and has severely limited the DGS action beyond deposit payout.[31]

The first provision is the rule by which a bank's size largely defines whether it should be liquidated or resolved through a business sale strategy. This implies that DGSs can only intervene in the liquidation of EU banks that are not defined as significant and do not pass the public interest test (PIA).[32] The second provision is the priority given by the BRRD to covered deposits – and therefore to DGSs as covered depositor agents – over uninsured deposits, a feature often labelled as "super-priority".[33] This provision contrasts, as we have seen, with the United States' National Depositor Preference, whereby all deposits have preferred status relative to other creditors and rank equally among themselves.[34]

In the BU, the only banks allowed to enter resolution are the large (significant) institutions meeting the PIA and the smaller (less significant) banks from those few Member States where national bank insolvency laws allow DGS to enter resolution proceedings with P&A type of operations. However, even in these limited cases, the ability for DGS to act beyond the strict pay box function is hampered by the super-priority granted to covered deposits in the creditor hierarchy.[35] In fact, as representatives of insured depositors, in most circumstances DGSs can recover the full amount of deposit payouts and the cost of intervention is therefore represented only by the foregone interest on deposit payouts between the date of payment and that of recovery in the receivership procedure. It is evident that no bank resolution, involving P&A operations, may carry a lower cost than bank liquidation. Therefore, the least cost principle – embedded in the "financial cap" provision by which resolution costs cannot exceed liquidation costs – makes it very difficult to activate measures that are alternative to deposit payout.[36] This contrasts with the large recourse to P&A operations in the US experience, described in the previous paragraph, and does not take into account IMF evidence that transferring assets and liabilities to an acquiring bank helps to reduce the destruction of value of a piecemeal liquidation and ensures a level playing field among creditors.[37]

The second element of rigidity, which deserves to be emphasized because it may defeat the original purpose of the BRRD to reduce the deployment of public resources in support of failing banks, relates to bail-in provisions. It is a fact that the bail-in norms in EU legislation go beyond internationally agreed

[31] Gelpern et al. (2019).

[32] According to the SSM report on less significant banks published in January 2020, the number of less significant institutions operating in the BU countries in 2019 was equal to 2,453. As of September 2020, the significant banks under the direct supervision of the ECB were 114.

[33] Within these non-covered deposits, the BRRD makes an additional distinction for deposits "from natural persons [i.e. individuals] and micro, small and medium-sized enterprises", which have priority over other deposits (or other creditors).

[34] Deslandes et al. (2019).

[35] See Restoy (2019).

[36] This is another feature of the EU system that is not consistent with the US situation, where the FDIC is able to manage banking failures in the capacity of receiver, using deposit insurance funds. See FDIC (2017), where it is shown how the FDIC has used these powers to handle the failure of almost 500 institutions in the five years after the GFC.

[37] IMF (2018).

standards.[38] For the effective functioning of the bail-in, the standards finalized in 2015 by the Financial Stability Board (FSB) to enhance loss-absorbing capacity require banks (assessed as systemic on a global scale) to issue a substantial amount of securities that – contractually or statutorily – can be converted into equity in the case of a resolution.[39] The BRRD is particularly restrictive in imposing a condition that 8 percent of a bank's own funds and eligible liabilities should be bailed-in before resolution funds can be used: differently from other jurisdictions, the EU rules state minimum bail-in requirements as a condition for the use of external resources in resolution (such as those from the SRF). Correspondingly, in order to increase the credibility of the resolution, the BRRD requires all entities that could eventually be resolvable to issue a substantial amount of bail-in-able securities (what is known as the MREL, or minimum requirement for own funds and eligible liabilities). In the EU, for the significant banks these requirements have been set by the SRB well above global levels.

According to Restoy (2019), the application of bail-in rules for banks in resolution is the most challenging issue for the smooth functioning of the crisis management framework in the BU. In fact, for large banks there are no apparent obstacles to meeting these more stringent requirements, given their balance sheet structure and their capacity to tap international capital markets. But this is not the case for mid-sized banks – the "middle class" in Restoy's definition[40] – that are assessed as significant (therefore falling under the remit of the SSM and of the SRM), but operate a retail-oriented business with liabilities mainly composed of capital and deposits.[41] These banks are typically too large to be subject to national liquidation procedures. At the same time, "*they might be also too small and too traditional to issue large amounts of MREL-eligible liabilities that could facilitate the application of the bail-in tool in resolution*".[42] The orderly failure management of those mid-size banks would require a degree of flexibility in the combination of resolution tools (such as bridge banks or P&A transactions), with forms of external support, which are currently not allowed by the existing rules.

*Uncertain criteria*

A recurring subject of discussion in the current debate on the BU bank resolution framework is the SRB's policy of considering resolution procedures as the exception ("resolution is for the few"[43]) and national insolvency regimes as the rule.[44] This puts the BU approach at odds with the US framework described in the previous section not only for its rigidity, but also for its reliance on criteria of uncertain interpretation and implementation. In fact, a policy approach that requires banks deemed FOLF to pass the Public Interest Assessment (PIA) to enter resolution remains prone to the different interpretations of the multifaceted concept of public interest.[45] This situation may introduce elements of ambiguity and may undermine the ultimate objective of limiting the use of public money in a crisis.

[38] FSB (2011).
[39] FSB (2015).
[40] Restoy (2018).
[41] Small banks would not go under resolution since they would typically be subject to liquidation under the relevant domestic insolvency regime.
[42] The latest evidence suggests that around 70 percent of significant banks directly under SSM supervision are not listed; 60 percent have never issued convertible instruments; 25 percent have never issued subordinated debt. See De Aldisio et al. (2019).
[43] König (2017).
[44] Veron (2019); Gelpern et al. (2019); Lastra et al. (2019).
[45] The BRRD lists the criteria for the "public interest" test and process under which a supervisor (or resolution authority) may declare a bank FOLF and place it under resolution.

An example is provided by the shifting notion of the size that allows banks to access resolution in the BU. Since 2016, the SRB has delivered negative public-interest assessments in cases affecting significant banks of smaller size (for example, the two Veneto banks in Italy), thus opening them up to the application of national insolvency procedures. At the same time, Banco Popular Español, with total assets of approximately €150 billion, was given a positive public interest test and was resolved by SRB. According to several authors, the SRB interpretation of the notion of public interest has led to a raising of the "bar" for banks' access to resolution in the BU, restricting it to banks that are not only significant but also very large in size (in other words the "bar" for resolution is even higher than that set for being considered a significant institution).[46]

However, uncertainty in the interpretation of public interest runs at a deeper level. As noted by several commentators, the use of PIA, as a key selection criterion for defining the appropriate intervention policy in a failing banks, is a source of internal contradictions in the current EU regime. Experience shows that, in order to minimize the use of public support, the SRB may defer bank liquidation to NRAs, which – based on alternative definitions of public interest – may then intervene and support national resolution with the use of public funding.[47] Often such contrasting approaches have been blamed on NRAs not being compliant with the goal of minimizing the use of public resources in winding down failing banks. The blame, however, should be directed to the ambiguity of the notion of "public interest", which is declined differently in the EU banking crisis framework and in the EU Treaty, and may also differ across national legislations and legal interpretations of the same rules.

Over time, the SRB has provided several clarifications on the concept of public interest in order to operationalize it, the latest having been issued in October 2020.[48] Despite this, according to well-qualified observers,[49] the PIA is still guided by the "vaguest criteria" and it remains an open question whether a multifaceted concept with inevitable elements of ambiguity can ever be transformed into a quickly actionable policy selection criterion. The problem, however, is not with the notion of public interest per se, which is deeply ingrained in the EU legal system, as much as with its use. Public interest is, in fact, the overarching principle of the whole framework for failing banks, consistent with its goal of reducing bank failure externalities[50]. What is questionable is whether a principle might be easily or effectively used as a test – such as the PIA – to select the appropriate intervention procedure on a case-by-case basis. In fact, it is not the presence/absence of public interest that should motivate the selection of alternative procedures. It should, instead, be the general presence and pursuit of public interest to justify the selection of different liquidation and resolution procedures for banks of different size and complexity. US regulators and policy makers, for example, have assessed that public interest is best served in the large majority of failing bank cases by resolution procedures based on the LCT, but when dealing with very large

[46] Gelpern et al. (2019). See also Sciorilli Borrelli (2017), where you can find the words of the then Chairperson of the European Banking Authority (EBA), A. Enria, on how the bar was raised by the decisions taken by the EU authorities for resolution.

[47] In the BRRD, national proceedings are referred to as "normal insolvency proceedings", outlining their "default" status, while resolution is defined as an exception based on public-interest and systemic-impact evaluations.

[48] SRB (2020).

[49] Gelpern and Veron (2020).

[50] The recognition by the US framework that failures of small banks have negative externalities, and its denial by the EU framework is one of the most notable differences between the two approaches and a possible reason of the greater effectiveness of the US framework.

banking institutions, whose resolution presents unique challenges exceptions are justified and alternative, such as those defined in the SRE clause of the FDICIA or in Title II of the DFA, should be considered.

A second criterion, which has had a similarly negative effect on the clarity of the BU approach to bank insolvency, is the notion of "state aid", introduced as a tool to contain the use of public resources to fund banks resolution. While controlling "state aid" to avoid the distortionary use of public funds has a fully legitimate policy rationale, its use to shape the funding of bank resolutions appears fraught with many questionable implications and uncertain outcomes. Moreover, it may introduce elements of rigidity, which could prove incompatible with the pursuit of resolution cost minimization. The EU Court of Auditors has recently raised the issue of measurement and accountability of implemented policies by observing that the Commission has not adequately measured the effects of its enforcement action on "state aid" discipline for distressed financial institutions, leaving open the question of whether the declared policy targets have been achieved.[51] An operational problem linked to the use of competition criteria in bank resolution is that the complexity of assessing legitimate state aid reduces the speed of decision making, making it a poor (i.e. hardly actionable) guide for procedures, such as bank interventions, that must be completed "over the weekend".[52]

A more fundamental problem with the use of "state aid" as a guide to appropriate actions in the domain of managing failing banks is provided by the Commission's assessment that DGS funds, even if fully provided by the banking sector, represent public funding and are therefore subject to the DG Comp's evaluation for deployment in case of bank resolution.[53] The notion that funds are public when they result from compliance with a law requirement – as in the case of mandatory bank contributions to DGSs – is very contentious. In fact, the General Court of the European Union has rejected it and the Commission has appealed the decision in front to the EU Court of Justice.[54] While the controversy has not been settled yet, we must observe that the EU Commission's approach to state aid for failing banks introduces an important contradiction in the BU framework for deposit insurance. In fact, it basically limits public DGSs activity to deposit payouts – that is to a pay-box status – in contrast with the broader set of responsibilities envisioned by the 2014 Deposit Insurance Directive.

What matters here, however, are not the implications of specific interpretations of the notion of "state aid", as much as the general fact that applying antitrust criteria to the management of financial institutions in distress generates uncertainty, which is more harmful than beneficial in the pursuit of the shared goal of limiting the use of fiscal resources to support distressed financial institutions.

## 4. Toward an effective and easily actionable EU bank insolvency framework

Under the conditions outlined above, it is very unlikely that the current EU crisis management framework can break the perverse bank-sovereign link. To restore system effectiveness, it is necessary to remove

[51] See the conclusions of the recent audit report of the EU Court of Auditors, ECA (2020).

[52] Such a task is made even more difficult at a time of digital transformation, when the very definition of the relevant market for small and medium-sized banks appears fraught with uncertainty. Second, it is often elusive to determine whether funds aimed at helping banks of medium and small size to exit the market may significantly affect market competitive conditions. Finally, the figures associated with interventions in distressed entities are very hard to quantify as they reflect assets evaluated at fire sale prices, which are hardly comparable to their equilibrium price in orderly market conditions.

[53] EU Commission (2010).

[54] ECA (2019); Gelpern et al. (2019).

existing elements of rigidity, replace current intervention criteria with new ones that are easily actionable and measureable, and consolidate existing rulebooks. These goals cannot be achieved by fine-tuning existing procedures because, as observed in Section 3, the shortcomings are not linked to individual procedures' own policy rationale or effectiveness. Instead, shortcomings derive from the fact that the joint implementation of sensible tools generates undesirable outcomes. If our diagnosis is correct, piecemeal reforms of separate aspects of the existing BU framework are therefore unlikely to succeed and a more extensive overhaul is called for. While such an approach is definitely ambitious and its realization fraught with difficulties, the path toward a more effective framework – one based on a single rulebook, with procedures that are sufficiently flexible, but linked to clearly defined, easily measurable and quickly actionable criteria – can be outlined looking at the FDIC experience.

In fact, three distinctive features of current FDIC procedures could help to overcome the complexity and fragmentation of the EU framework: reliance on the Least Cost Test, greater flexibility of choices between deposit payout and P&A procedures for all banks, and, finally, a gradual concentration/coordination of deposit insurance and resolution authority responsibilities.

While reforms in these three areas are challenging, it is noteworthy that those reforms are perfectly compatible with the current EU institutional framework and do not alter the current division of responsibilities between the SSM and SRM. They also do not require introducing new liquidation or resolution tools.

Moreover, moving in the proposed direction would also mean incorporating in the BU framework some of the more successful features of the FDIC experience, in line with the suggestions of an increasing group of influential policy makers – from the German Vice Chancellor and Finance Minister, Olaf Scholz, to the Bank of Italy Governor, Ignazio Visco[55] – and of academics and practitioners. The following three key steps define a logical sequence toward that goal.

*The first step: the adoption of a single rulebook.*

The starting point toward a strategy of simplification is the adoption of a single rulebook for crisis management. We have seen what has been achieved in the US through the implementation of the Least Cost Test. In the 90 days that elapse between when an IDI becomes critically undercapitalized and its closure, the FDIC is able to collect bids for the failed bank's business, define the cost of deposit payout, rank all the existing solutions and select the least costly one. Such remarkable speed is possible thanks to the pursuit of one goal, that of minimal cost for the DIF. It is important to underline that the pursuit of minimal cost does not imply any predetermined solution. In the US, it has led to the purchase of the whole business, or just a part of it, which may include all deposits or only the insured ones. Lack of a predefined outcome is an effective weapon against moral hazard. Moreover, post-FDICIA experience shows that the cost of FDIC interventions has never required activating external funding from the Treasury and that in fact, the LCT has provided an incredibly successful tool to insulate the sovereign from bank instability and prevent the bank-sovereign "doom loop".

In the EU framework, as we have seen in Section 3, the selection of the appropriate bank intervention policy responds to at least four different criteria. Three of them are explicit: one refers to banks (the public interest criteria), one relates to the nature of external funds (the state aid criterion) and one relates to the existing procedures (the financial cap criterion). Finally, banks' size could be considered as a fourth

[55] Visco (2020).

"implicit" criterion, because it is unlikely that small distressed banks meet in the EU framework the public interest requirement. Among these criteria, three are widely used - the public interest, size and the state aid – while one – the financial cap - as previously discussed is seldom activated because it has been hollowed out by the super-priority rule.

According to the US experience and as recognized by a growing number of commentators, *size* is not a good metric to distinguish banks that should be liquidated, but at least it is a clear and unambiguous criterion. On the contrary, *public interest* and justifiable *state aid*, as we have seen, are features that are complex to determine and even more complex to measure. Their joint implementation has required lengthy coordination efforts among EU authorities and between them and their national correspondent, delaying in many cases bank resolution and increasing its cost with the paradoxical result of worsening the bank-sovereign loop that they were intended to mitigate. Complexity, when it comes to crisis management, implies delays of execution and does not pay. In the words of Charles Goodhart, "whatever the mechanism for resolving a bank, the sooner that is done, the less the likely burden that will have to be subsequently met".[56] Switching from multiple criteria, managed by multiple entities, to a simpler and widely tested criterion, such as the LCT, managed by a single institution, may therefore represent a superior solution that achieves the same goals at a considerably lower cost. While this approach would be directed to the vast majority of failing banks, additional criteria and procedures could still apply to exceptional cases, such as those represented by the failures of very large complex institutions, where arguably the LCT could not be applicable or offer the most effective solution.

In fact, the US experience shows that the general reliance on the LCT needs not to be seen in opposition to or exclusive of other criteria. As noted earlier, in the US the Systemic Risk Exception (SRE) allows the FDIC to follow a resolution strategy different from that that would be selected under the LCT whenever reliance on LCT could not prevent "serious adverse effects on economic conditions or financial stability" and public interest could be better served by bypassing the LCT.

Replacing current criteria with a generalized, if not exclusive, reliance on a Least Cost Test across the BU – or, more precisely, making it the default option as in the US – would help to address most problems affecting the EU framework for bank insolvency. It would provide the SRM with a common criterion underlying the SRB and NRAs policies, thereby facilitating their coordination. It would eliminate the current dualism between resolution procedures managed at the SRB level (reserved to large banks) and liquidation/insolvency procedures managed at the national level (limited to small banks)[57]. Similar procedures and approaches would be shared between the centre and the periphery, as is the case for the SSM, where procedures are largely shared even if the focus is on banks of different size. It would also be very effective at preventing the use of public funding, as the FDIC experience shows, without having to resort to antitrust policies in times of crisis. Last but not least, since the LCT has already been introduced in the BU crisis resolution framework via the "financial cap", the proposed strategy would simply require bringing back to life an already existing criterion and providing it with the full weight that it deserves, while reducing the operational relevance of the other criteria. Operationally, this would mean extending resolution practices, such as P&A operations to small banks and to NRAs, allowing all DGS to fund them in

[56] Goodhart (2012).

[57] We characterize the division of labor between the SRB and the NRAs as dualistic as opposed to complementary, (i.e. segmented as opposed to integrated) due to the unwarranted exclusion of small banks from resolution procedures and due to the many frictions caused by an excess of conflicting rules. Rationalization by simplification would help evolve toward a full complementarity between central and national institutions.

addition to deposit payout, while granting to central EU level institutions and funds the possibility to pursue additional approaches – such as open bank interventions, bridge banks – as dictated by the intervention needs of the largest and most complex institutions

*The second step: making the Least Cost Test work.*

The adoption of the LCT as a guiding criterion in bank failure management requires some preconditions. First, it requires a fair competition among the different solutions for dealing with a failing bank. As we have seen, this is not the prevailing condition in the present BU setting, where the DGS super-priority tilts the balance heavily in favour of deposit payout. In fact, the LCT is already embedded in the BRRD framework, but it is toothless. It states that the cost of P&A operations cannot exceed the cost of covered deposit payout or, in BRRD terminology, that the cost of covered deposits provides a "financial cap" to the cost of business sale options. However, with DGS super-priority, such a cap is close to zero. This makes it very difficult for resolution policies to be cost-competitive with liquidation, *de facto* preventing P&A transactions from becoming an instrument in the BU resolution toolbox.

The US experience, described in Section 2, shows that the two regimes of priority for insured deposits that have existed from the 1980s to present have both allowed resolution based on P&A to be a cost-effective solution. Prior to 1993, the FDIC and all depositors – insured and uninsured – were put on the same footing as all other bank creditors, with no priority of sorts, while in 1993 the National Deposit Preference was introduced to allow deposits – both insured and uninsured – to enjoy the same status and have higher seniority than other bank creditors. Table 4 shows that P&A operations were cost-effective, with costs to total assets lower than deposit payout during both the S&L crisis (pre-1993) and the GFC (post-1993), but that only after the introduction of National Depositor Preference this has led to a significant increase of the share of P&A operations versus deposit payout.

The question may arise as to whether making liquidation costs higher by removing the super-priority is indeed compatible with the principle of reducing the cost of managing bank failures. The answer is largely dependent on the definition of proper cost indicators in a bank resolution procedure. If policy makers attach no cost to the loss of local economic activity and a high cost to using DGS funds, then the adoption of super-priority is justified. If costs are attached to both issues, super-priority should instead be removed.

Over time, the US has developed a balance between achieving a type of intervention able to preserve the going-concern value of often large portions of banks' balance sheet and keeping the FDIC intervention costs within the DIF reach, preventing any activation of Treasury backstop facilities. This successful combination appears to have benefited from the general depositor preference. The US evidence, therefore, suggests that, by eliminating DGS super-priority and ranking insured and uninsured depositors equally in receivership, the BU would open the way to the implementation of the LCT, making resolution policies cost-effective while safeguarding the financial viability of DGSs.

An additional tool that may also be considered is that of revising upwards the ceiling of deposit insurance. In the US, the ceiling has been raised from $100.000 to $250.000 since the GFC. What is remarkable is that the resulting increase in the cost of bank liquidation has not impaired the FDIC's ability to fund its operation through the DIF, without any recourse to the Treasury backstop.

*The third step: integration between bank resolution authorities and the DGS.*

Reliance on the LCT helps not only to better link central and national resolution authorities, it may also facilitate the pursuit of more effective integration between bank resolution authorities and the DGS in the BU. At the national level, this would allow NRAs to mobilize DGS funds for bank resolution purposes and at the central level it would provide a strong justification for SRB management of the still to be established European Deposit Insurance Scheme (EDIS). It also suggests that SRF funds and future EDIS funds should be treated alike because in a LCT operational environment they are functionally equivalent. In other words, since reliance on a P&A or on a deposit payout solution cannot be envisioned ex-ante, the two funding facilities should be managed in pool or possibly merged. Even if institutional factors may prevent a replication in the BU of the US model, where the two functions have always been concentrated in one single institution, it is still possible to follow the US example and consider establishing a common bank insolvency procedure at the EU level, independent from existing national bankruptcy laws, locally managed for less significant institutions and centrally managed for the significant ones. In fact, such an approach would make it possible for the SRM to be the conduit of a common regulatory framework for failing banks of all sizes, in line with the call to make "instruments that have proven useful for large banks available for small banks too" made by Mr Scholz one year ago.

As long as harmonization of national and central facilities is provided by reliance on a common LCT that bridges the current divide between the insolvency treatment of large and medium to small banks, the coordination, within the SRM, of national and central funding responsibilities is not difficult to envision nor to operationalize. In a BU with minimal cross-country risk sharing, such as the present one, the interoperability of local (DGS) and central (EDIS' own DIF and SRF) funds could be implemented along rigidly separated country lines. Should the BU evolve toward schemes with progressive degrees of risk-sharing – such as the original 2015 Commission proposal or the 2019 proposal from Mr Scholz – the interoperability of funds could be extended across countries and across functions, with no fragmentation between deposit insurance and resolution funds.

While the Commission, in its 2015 proposal, already suggested that EDIS management should be attributed to the SRB, very much in line with what would be desirable from the perspective of an LCT based system, a similar link may still be missing at the national level, causing potential inconsistencies in a decentralized structure, such as the one now prevailing in the BU. To have the two functions – deposit insurance and bank failures management – sitting in the same institution or in closely linked institutions insures operational efficiency. In fact, the search for a least cost strategy is greatly facilitated if the same institution that acts as a receiver for failed banks is also the deposit insurance manager or if the two functions sit in two closely integrated institutions. A decision involving two departments of the same institutions relying on the same information system may require days. The same decision involving two institutions with separate management and information systems may require weeks or months.

Finally, LCT operates as a strong incentive toward the BU integration process. As a matter of fact, reliance on the LCT does not only help to reap the benefits of integration – functional and geographical – of resolution practices once it is in place, it also provides the incentive structure needed for the integration process to move ahead, acting as a powerful integration-enabling tool. Lacking a shared approach between central and national institutions and across countries there would be little or no incentive for national authorities to share their own DGS resources and management prerogatives. Similarly, there would be little incentive for a centrally established EDIS to share risks with national DGS. Moreover, it would be very complex to promote at the national level the same integration/coordination of the bank

resolution and deposit insurance functions that has been proposed at the central level. At a more fundamental level the question could be raised of how the "third pillar" of the BU can be completed without an agreement on whether deposit insurance funds should only be used for deposit payouts or also to fund alternative resolution policies both at the central and at the national level?

For this reason, a common denominator of intervention strategies shared at the central and local level would go a great length in providing clarity of purpose, accountability and transparency to the system and would set the right incentives for a broader sharing of risks and responsibilities. Differently, further regulation - that of the third pillar - may risk generating additional rigidities to the system, worsening instead of improving the problems that the European framework has already faced in its first years of application.

## 5. Conclusions

We started with Mr Scholz's recommendation to follow the FDIC example to mend the gap in the treatment of large versus medium to small banks. Our analysis has led us to conclude that this objective is indeed feasible and can be achieved by reducing the excessive number of triggers for action – which paradoxically make the EU procedure less and not more easily actionable – to one single criterion: the least cost test or, in the EU jargon, the "financial cap" test.

Reliance on a single criterion – such as the LCT – may provide additional clarity and effectiveness to the EU framework for bank insolvency and resolution. Moreover, its prominence with respect to the PIA should not be seen in opposition to the pursuit of public interest but, on the contrary, it should be considered as a step toward its achievement, adding extra tools and flexibility to the existing framework. At the same time, the LCT would provide a powerful incentive to integrate deposit insurance and bank crisis management at both central and national levels.

In the last thirty years, US experience has shown that the Least Cost Test alone is sufficient to successfully achieve a flexible treatment of failing banks that does not discriminate between large and small institutions and preserves as much as possible the going concern value of parts of failing institutions' balance sheet, while minimizing intervention costs and protecting US taxpayers from the bank-sovereign "doom loop". In other words, the FDIC experience suggests that a reduction of the number of selection criteria currently used in the EU bank resolution framework need not water down the effectiveness of the overall framework. Quite to the contrary, it points to a feasible reform path where simplification of the current framework would increase its effectiveness.

This leads us to the opening question of this paper, borrowed from the great architect and Bauhaus director, Mies van der Rohe, whose point was that simplicity and clarity lead to good design. That less is more. Could this be true for regulatory design as well?

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**Table 1. Assets, deposits, and insured deposits by type and size of institution and federal agency**

(*Second quarter 2020; dollar figures in millions*)

| | Number of Institutions | Total Assets | Domestic Deposits | Ext. Insured Deposits |
|---|---|---|---|---|
| **Commercial Banks and Savings Institutions** | | | | |
| FDIC-Insured Commercial Banks | 4,430 | $19,840,796 | $14,464,051 | $7,953,515 |
| FDIC-Supervised | 2,949 | 3,342,933 | 2,693,966 | 1,732,232 |
| OCC-Supervised | 779 | 13,486,591 | 9,591,964 | 5,128,394 |
| Federal Reserve-Supervised | 702 | 3,011,272 | 2,178,121 | 1,092,890 |
| FDIC-Insured Savings Institutions | 636 | 1,297,223 | 1,054,168 | 847,926 |
| OCC-Supervised | 285 | 570,090 | 447,455 | 372,426 |
| FDIC-Supervised | 315 | 380,179 | 291,342 | 227,243 |
| Federal Reserve-Supervised | 36 | 346,954 | 315,371 | 248,257 |
| **Total Commercial Banks and Savings Institutions** | **5,066** | **21,138,019** | **15,518,218** | **8,801,441** |
| **Other FDIC-Insured Institutions** | | | | |
| U.S. Branches of Foreign Banks | 9 | 96,331 | 43,795 | 35,894 |
| **Total FDIC-Insured Institutions** | **5,075** | **21,234,350** | **15,562,013** | **8,837,335** |
| **Commercial Banks and Savings Institutions by Size** | | | | |
| Less then $100 Million | 1,010 | 60,600 | 50,005 | 42,342 |
| $100 Million to $1 Billion | 3,153 | 1,096,107 | 909,922 | 685,243 |
| $1 Billion to $30 Billion | 830 | 3,345,035 | 2,693,324 | 1,819,108 |
| $30 Billion to $250 Billion | 60 | 4,777,065 | 3,745,793 | 2,126,077 |
| Greater than $250 Billion | 13 | 11,859,212 | 8,119,174 | 4,128,670 |
| **Total Commercial Banks and Savings Institutions** | **5,066** | **21,138,019** | **15,518,218** | **8,801,441** |
| **Commercial Banks and Savings Institutions Size (Percent)** | | | | |
| Less then $100 Million | 19.9 | 0.3 | 0.3 | 0.5 |
| $100 Million to $1 Billion | 62.2 | 5.2 | 5.9 | 7.8 |
| $1 Billion to $30 Billion | 16.4 | 15.8 | 17.4 | 20.7 |
| $30 Billion to $250 Billion | 1.2 | 22.6 | 24.1 | 24.2 |
| Greater than $250 Billion | 0.3 | 56.1 | 52.3 | 46.9 |
| **Total Commercial Banks and Savings Institutions** | **100.0** | **100.0** | **100.0** | **100.0** |

*Source: FDIC Quarterly Banking Profile, Q2 2020*

**Table 2. Assets, Deposits, Total Cost to FDIC during the S&L Crisis (1980-1996) and Subprime Crisis (2008-2013), by Resolution Method and Size of Failing Institution**

(*dollar figures in millions*)

| | 1980-1994 | | | | 2008-2013 | | | |
|---|---|---|---|---|---|---|---|---|
| | **Number of Failures** | **Total Assets** | **Total Deposits** | **Total Cost to FDIC** | **Number of Failures** | **Total Assets** | **Total Deposits** | **Total Cost to FDIC** |
| **Payout** | | | | | | | | |
| < 100M | 453 | $ 15,810 | $ 16,776 | $ 5,529 | 6 | $ 269 | $ 269 | $ 108 |
| 100M to 1B | 179 | $ 46,643 | $ 25,615 | $ 15,735 | 15 | $ 5,516 | $ 5,055 | $ 1,505 |
| 1B to 30B | 13 | $ 33,379 | $ 6,418 | $ 5,781 | 5 | $ 10,116 | $ 2,025 | $ 2,660 |
| > 30B | - | $ - | $ - | $ - | - | $ - | $ - | $ - |
| **Total** | **645** | **$ 95,831** | **$ 89,676** | **$ 27,045** | **26** | **$ 15,901** | **$ 13,888** | **$ 4,273** |
| **P&A** | | | | | | | | |
| < 100M | 1,133 | $ 36,120 | $ 35,204 | $ 6,640 | 106 | $ 6,131 | $ 5,769 | $ 1,672 |
| 100M to 1B | 424 | $ 129,564 | $ 116,466 | $ 23,465 | 299 | $ 99,322 | $ 90,011 | $ 22,401 |
| 1B to 30B | 118 | $ 378,843 | $ 281,967 | $ 47,245 | 56 | $ 227,249 | $ 182,048 | $ 29,493 |
| > 30B | - | $ - | $ - | $ - | 1 | $ 30,699 | $ 18,942 | $ 12,072 |
| **Total** | **1,675** | **$ 544,527** | **$ 433,637** | **$ 77,351** | **462** | **$ 363,401** | **$ 296,770** | **$ 65,637** |
| **Payout and P&A** | | | | | | | | |
| < 100M | 1,586 | $ 51,930 | $ 51,980 | $ 12,169 | 112 | $ 6,401 | $ 6,038 | $ 1,779 |
| 100M to 1B | 603 | $ 176,207 | $ 160,854 | $ 39,201 | 314 | $ 104,838 | $ 95,060 | $ 23,906 |
| 1B to 30B | 131 | $ 412,221 | $ 310,479 | $ 53,026 | 61 | $ 237,365 | $ 190,618 | $ 32,153 |
| > 30B | - | $ - | $ - | $ - | 1 | $ 30,699 | $ 18,942 | $ 12,072 |
| **Total** | **2,320** | **$ 640,358** | **$ 523,313** | **$ 104,395** | **488** | **$ 379,302** | **$ 310,658** | **$ 69,910** |

*Source: FDIC, our calculations; it excludes Washington Mutual*
*Payout comprises Insurance Deposit Transfer (IDT) and Pay Out (PO); P&A comprises Purchase and Assumption of Insured deposits only (PI) and Purchase and Assumption of insured and uninsured deposits, certain other liabilities, and a portion of the assets (PA). Assistance, repurchase agreements, consignment program institution as well as other programs are not tallied in this table. Figures from 1980 to 1994 comprise resolutions carried out by the FDIC (1,481), FSLIC (94), and RTC (745). Frequency of P&As increases when FSLIC and RTC interventions are excluded from the sample.*

**Table 3. Loss rates for the S&L Crisis and the Subprime Crisis by Resolution Method**
*(percent)*

| | Program Wide* | Mean | Median |
|---|---|---|---|
| **1980 to 1994 Crisis** | | | |
| Assistance Agreements | 8.3 | 7.9 | 3.3 |
| P&A with Loss Share | 5.5 | 8.7 | 7.5 |
| P&A without Loss Share | 14.4 | 21.2 | 19.8 |
| IDT | 28.0 | 26.7 | 26.1 |
| Payout/DINB | 26.2 | 25.1 | 25.2 |
| **Total** | **12.7** | **20.8** | **19.5** |
| **2008 to 2013 Crisis** | | | |
| P&A with Loss Share | 17.8 | 22.0 | 21.3 |
| P&A without Loss Share | 3.2 | 28.2 | 26.5 |
| Payout/DINB | 27.1 | 32.7 | 34.5 |
| **Total** | **10.4** | **24.6** | **23.6** |
| **Total Excluding Washington Mutual** | **18.8** | **24.6** | **23.6** |

*Source: FDIC. Losses are calculated as the FDIC loss estimate as of year-end 2018 divided by total assets as of the quarter prior to resolution. *Mean losses, weighted by assets as of the quarter prior to resolution*
*Note: P&A: Purchase and Assumption; IDT: Insured Deposit Transfer; DINB: Deposit Insurance National Bank*

**Table 4. Loss Rates for Payout and P&A during the S&L and the Subprime Crisis by Size and Resolution Method**
*(percent values)*

| | 1980-1994 | | | 2008-2013 | | |
|---|---|---|---|---|---|---|
| | Weighted Average | Mean | Median | Weighted Average | Mean | Median |
| **Payout** | | | | | | |
| < 100M | 35.0 | 40.0 | 29.3 | 40.0 | 46.6 | 44.1 |
| 100M to 1B | 33.6 | 43.1 | 31.5 | 27.3 | 29.6 | 32.3 |
| 1B to 30B | 17.3 | 32.3 | 23.0 | 26.3 | 28.5 | 34.8 |
| **Total** | **28.2** | **40.8** | **29.7** | **26.9** | **33.5** | **34.8** |
| **P&A** | | | | | | |
| < 100M | 18.4 | 22.1 | 19.8 | 27.3 | 28.4 | 25.6 |
| 100M to 1B | 18.1 | 18.8 | 14.0 | 22.6 | 23.9 | 22.8 |
| 1B to 30B | 12.5 | 15.4 | 10.1 | 13.0 | 18.0 | 15.5 |
| **Total** | **14.2** | **20.6** | **17.7** | **16.1** | **24.2** | **23.3** |
| **Payout and P&A** | | | | | | |
| < 100M | 23.4 | 27.0 | 22.2 | 27.8 | 29.4 | 25.9 |
| 100M to 1B | 22.2 | 25.0 | 16.9 | 22.8 | 24.1 | 23.2 |
| 1B to 30B | 12.9 | 16.6 | 10.6 | 13.5 | 18.9 | 15.9 |
| **Total** | **16.3** | **25.8** | **20.5** | **16.6** | **24.7** | **23.8** |

*Source: FDIC data, our calculations. Payout comprises Insurance Deposit Transfer (IDT) and Pay Out (PO); P&A is comprised of P&A of Insured deposits only (PI) and P&A of insured and uninsured deposits, certain other liabilities, and a portion of the assets (PA). Weighted Average is calculated as the sum of the cost for the DIF divided by sum of the assets. Mean is the simple average of the distribution of the ratio of the cost for the DIF to the assets of each IDI. Median is the median of the distribution of the ratio of the cost for the DIF to the assets of each IDI.*