

SRB Working Paper Series #4

The 2023 Banking Turmoil: Implementation Lessons for Resolution Authorities

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JEL Classification Numbers:	K220
Keywords:	Banking Regulation, Bank Resolution, Financial Regulation, Financial Crisis, Financial Stability
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Publication date: July 2024

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Abbreviations

AMV	Asset Management Vehicle
ACPR	Autorité de Contrôle Prudentiel et de Résolution
BCBS	Basel Committee on Banking Supervision
BFI	Bridge Financial Institution
BHC	Banking Holding Company
BRRD	Banking Recovery and Resolution Directive
CMDI	Crisis Management and Deposit Insurance Framework
CMG	Crisis Management Group
DFSA	Danish Financial Supervisory Authority
DGS	Deposit Guarantee Scheme
DGSD	Deposit Guarantee Scheme Directive
DIF	Deposit Insurance Fund
EBA	European Banking Authority
ECB	European Central Bank
EEA	European Economic Area
ELA	Emergency Liquidity Assistance
ESM	European Stability Mechanism
EU	European Union
FDIC	Federal Deposit Insurance Corporation
FED	Federal Reserve System
FINMA	Financial Market Supervisory Authority
FSB	Financial Stability Board
FSC	Financial Stability Company
GFC	Global Financial Crisis
G-SIB	Global Systemically Important Bank
HQLA	High Quality Liquid Assets
IADI	International Association of Deposit Insurers
IDI	Insured Deposit Institution
IMF	International Monetary Fund
LCR	Liquidity Coverage Ratio
LoLR	Lender of Last Resort
MREL	Minimum Requirement for own funds and Eligible Liabilities
OBBI	Open Bank Bail-In
OLF	Orderly Liquidation Fund
P&A	Purchase and Assumption

PRS	Preferred Resolution Strategy
SME	Small and Medium-sized Enterprise
SRB	Single Resolution Board
SRF	Single Resolution Fund
SRMR	Single Resolution Mechanism Regulation
SSM	Single Supervisory Mechanism
SVB	Silicon Valley Bank
TBTF	Too Big to Fail
TLOF	Total Liabilities including Own Funds
UK	United Kingdom
VRS	Variant Resolution Strategy
WDC	Write Down and Conversion

I. Executive summary

The purpose of this SRB Working Paper is to explore whether the 2023 banking turmoil in US and Switzerland can provide some preliminary implementation lessons for resolution in the European Union. The events of March 2023 represented the most significant banking stress affecting financial markets since the 2008-2009 Great Financial Crisis (“GFC”). They started with the crisis of Silicon Valley Bank (“SVB”) and other regional American banks. The uncertainty determined by the crisis propagated to Europe, leading to the demise of Credit Suisse – a G-SIB characterised by a long-standing negative track record and negative economic results, putting in doubt the viability of its business model¹ – which was subsequently merged with UBS.

The 2023 banking turmoil has led to new reflections on the effectiveness of the post-GFC prudential and resolution frameworks. As a result, international regulators have assessed the events, drawing initial lessons for potential reforms of banking regulation for supervision and resolution (on the reports of the BCBS and the FSB on the lessons learnt, see Box 1).²

As concerns prudential regulation and supervision, the first element which emerges is that the ultimate cause of the recent bank failures on both sides of the Atlantic was bad governance, shortcomings in basic risk management practices and unsustainable business models, coupled in certain cases with weak application of the international standards. Higher capital and liquidity requirements cannot by themselves restore banks’ ability to remain profitable when the business model is fundamentally flawed.

The banks in crisis showed: (i) common balance-sheet fragilities, fueled by excessive risk-taking and inadequate risk management practices, ultimately threatening firms’ solvency, and (ii) exacerbated maturity mismatch (for the US banks, long-term assets funded with short-term liabilities, in particular large amounts of uninsured deposits, plus large unrealised losses on securities held at amortised costs), amplified by digitalisation and social network dynamics, triggering deposit runs. As concerns the shortcomings in regulation and supervision, since 2018, the US regulation for medium-sized banks had been revised, exempting them fully or partially from certain requirements.³

More effective supervision is needed to identify and challenge poor strategic decisions, governance and risk management leading to weak business models. In addition, authorities have to use all the instruments of the toolkits at their disposal, including sanctions, to promptly enforce appropriate actions, and to have the appropriate quality and quantity of supervisory resources.⁴

¹ See chart. 1.

² In particular, for the relevance of the banking turmoil for the architecture of (i) deposit insurance systems, see IADI (2023); (ii) supervision and going-concern prudential regulation frameworks, see BCBS (2023) and (iii) for resolution frameworks, see FSB (2023a). Among the various academics and commentators, see Bair *et al.* (2023); Berner *et al.* (2023); Berner (2023); Tuckman (2023); Bodellini and Colino (2023). In the institutional domain, see FSB (2023a); BCBS (2023); Barr (2023a); Coelho *et al.* (2023); De Cos (2023); Enria (2023); FDIC (2023a); FDIC (2023b); FED (2023a); Gruenberg (2023); Expert Group on Banking Stability (2023).

³ US mid-sized banks were partially or fully exempted from some prudential standards, such as the liquidity coverage ratio (LCR) and net stable funding ratio (NSFR). In addition, these banks were subject to stress tests with a lower frequency, could not reflect in their capital requirements the unrealised losses on securities held as ‘available for sale’ in the balance sheet, and the preparation of resolution plans was not completed at the time of the crisis.

⁴ According to IMF (2023), in the case of US banks, the reports by FDIC and Fed conclude that banks pursued risky business strategies compounded by weak liquidity and inadequate risk management. Supervisors had indeed identified several vulnerabilities, but were not quick enough to escalate supervisory actions, nor they required banks to adopt a more prudent behaviour when there was time. When an escalation was recommended, banks ignored it. In the case of Credit Suisse, already in 2019, an IMF FSAP had asked to fill gaps in banking regulation and supervision (regulator understaffed), reduce reliance on external auditors, remedy the lack of legal powers to restrict dividends. See also FSB (2023c).

On prudential regulation, the Basel Committee will pursue targeted analytical work to assess whether specific features of the Basel framework performed as intended during the turmoil – for example, the operationalisation and calibration of liquidity standards and the appropriate implementation of the interest rate risk provisions in the banking book, the treatment of held-to-maturity assets and the role of AT1 in the capital framework – and assess the need to explore policy options over the medium term.

In terms of crisis management, the FSB review upholds the appropriateness and feasibility of the framework, and identifies a number of implementation issues for global and other systemically important banks. Among the positive aspects, resolution planning and capabilities, as well as the build-up of sufficient loss-absorbency capacity, proved useful and provided an executable alternative to the solution preferred by the authorities for Credit Suisse. In addition, cross-border cooperation and crisis communication within the core Crisis Management Groups (CMG) worked well and allowed for thorough contingency planning during the crisis build-up.

Concerning the implementation issues, the most important are (see box 1 for more detail): a) communication and coordination of information among authorities, even beyond those involved in the CMGs; b) choice of resolution strategies and optionality of resolution tools; c) consideration about the features of an effective public sector funding backstop; d) implementation of the bail-in tool cross border; d) consideration of the resolution of banks that could be systemic in failure; e) bank runs, uninsured deposits and the role of deposit insurance and resolution.

The 2023 events had limited repercussions on the EU banking sector, whose resilience can be explained by two factors. First, EU banks are characterised by a more broadly diversified business model when compared to the US regional banks involved in the crisis. Second, the EU has applied international regulatory standards – including the obligation to comply with liquidity and resolution requirements – to all banks, including small- and medium-sized banks.⁵ However, the 2023 crisis shed light on important elements to be further assessed also in the EU context, especially in the area of resolution, which is characterised by a more elaborated institutional framework. More specifically, focusing on the EU crisis management framework, this paper seeks to explore the changes that could be made in the regulation and implementation of the framework to improve its effectiveness in the management of a banking crisis.

After a short summary of the 2023 events in section 2, among the implementation issues highlighted by the FSB Report, we focus on the following three aspects: (i) complementarity of DGSs and resolution frameworks to limit bank runs and manage a bank crisis more effectively; (ii) resolution strategies and optionality in resolution tools; (iii) the design of an effective public sector liquidity backstop in resolution.

(i) Bank runs, the role of deposit insurance and resolution (Section 3): one of the topics that emerged in the 2023 turmoil was an extremely accelerated run on deposits – favoured by connections of similar clients through digital platforms. In addition, and particularly in the SVB case, large amounts of uninsured deposits played a potentially destabilising role. Given the relevance of deposits in bank business model – that is, their contribution to the so-called bank franchise value – ensuring deposit stability is critical for safeguarding financial stability.

An effective Deposit Guarantee Scheme (“DGS”) should contribute to protecting financial stability by curbing depositors’ incentives to run. Indeed, the literature has showed that insured depositors have less incentive to run with respect to uninsured ones. However, in the aftermath of the SVB case, institutional bodies, practitioners and academics have started reflections on the different ways to prevent bank runs and ensure financial stability, including considerations in the US on the increase of the deposit insurance coverage for all or some categories of depositors (so-called targeted

⁵ Enria (2023).

coverage). In this section, we first illustrate and assess these reform proposals – concerning both the liabilities and the assets side of the balance sheet – some of which show merit and deserve to be further scrutinised.

Turning then to Europe, according to a recent EBA report, 96% of EEA depositors are DGS-protected. Given the low ratio of uncovered depositors, the EBA concludes that increasing the DGS coverage level would be very expensive, while bringing limited additional protection in terms of financial stability and consumer protection. Despite their low number (4%), uncovered depositors (mostly corporates) hold more than half of EEA deposits. Increasing coverage for them would not represent a fundamental change, as on average there would still be less than half of eligible deposits fully covered, even where the coverage level was to be EUR 1,000,000. As a consequence, risks of run behaviours would not be neutralised.

Reflections at international level on the lessons learned from the 2023 bank turmoil are on-going, including on the potential review of aspects of liquidity and interest rate risk provisions in relation to maturity mismatches, outflow rates of deposits, reliability of historical estimates for interest rate risk and potential changes in customers' behaviour. As concerns in particular deposit risk and stability, a better understanding and closer monitoring of banks' deposit structure and maturities would be helpful. Concentration requirements in relation to uncovered deposits could also be considered.

Additional considerations are related to the complementary role of deposit insurance and resolution to safeguard financial stability and prevent bank runs. The introduction of a minimum long term debt requirement for banks of a certain size reduces incentives to run. For example, the EU resolution framework envisages, for banks with total assets higher than euro 100 bln, a mandatory layer of subordinated liabilities, which shields uninsured depositors from loss absorption. In the case of SVB, the presence of this requirement would have forestalled or strongly mitigated the run (Gruenberg 2023). Finally, depositor protection and stability may be enhanced by a different and more active role for DGSs in the resolution process - acting as a risk and loss minimiser in resolution. In specific cases, DGSs could fully protect depositors by withstanding the losses for the part of their claims exceeding the coverage level. A well-functioning DGS could indeed allow better resolution objectives to be achieved by financing the transfer of a bank to another market player in the resolution process, facilitating the market exit of the failing bank.⁶ In the EU, however, the use of DGSs in resolution (and in alternative measures), outside of the traditional "paybox" function, is constrained by the legal framework, and particularly the "super priority" enjoyed by the DGSs in the creditors' hierarchy. The Single Resolution Fund ("SRF") can in turn intervene only if a specific share of liabilities has already been written down or converted. We consider that the Crisis Management and Deposit Insurance (CMDI) proposal of the European Commission would bring a substantial improvement to the EU crisis management framework, facilitating the use of DGSs as financial bridges in order to reach the minimum bail-in requirement (8% of total liabilities and own funds) for accessing the SRF for failing banks, where needed.

In conclusion, effective resolution regimes can contribute to deposit stability in different ways: (a) mandating, for banks with a certain size (above 100 bn, in the EU), a minimum requirement of long-term subordinated debt expected to absorb losses in resolution; (b) strengthening market discipline (and decreasing excessive risk-taking incentives) and, when resolution is eventually opened, (c) enabling a timely transfer of the deposit base to other players facilitating the market exit of the failing bank, strongly mitigating uncovered depositors' incentives to run.

(ii) **Optionality and flexibility in the choice of resolution tools (Section 4)**: another theme highlighted by the crisis is the opportunity to investigate the choice and feasibility of

⁶ A similar result would be obtained, for the banks not earmarked for resolution, with DGSs intervention with measures alternatives to piecemeal liquidation.

resolution strategies, including bail-in tool in various scenarios, such as liquidity crises. Other strategies, for example transfer tools, or a combination of strategies, could be more appropriate in certain situations. This implies the need to preserve optionality and flexibility in the use of resolution tools in crisis preparation, to cater for different failure scenarios.

The US, UK and Swiss authorities displayed flexibility in their resolution approaches. The US employed flexibility to address the failure of three institutions, avoiding widespread contagion and preserving the stability of regional banks. As expected, shareholders and senior creditors were written down, avoiding moral hazard and promoting accountability. While the protection of unsecured depositors – via the systemic risk exception – increased resolution costs, the additional expenses will be recovered from the banking sector, in alignment with the general resolution principle according to which banks should pay for their resolvability. In the UK, the SVB subsidiary was earmarked for liquidation because it was deemed to have no critical functions and no impact on financial stability in case of insolvency. However, the Bank of England changed its strategy in the face of potential disruption to the fintech sector, and finally decided to sell SVB UK to a larger bank.

In Switzerland, the merger between Credit Suisse and UBS took place outside of resolution. However, according to the Swiss resolution authority, the resolution framework offered a viable and alternative option. Although this option was not eventually pursued, the Swiss crisis-management tool-box would have been poorer without resolution. Optionality therefore remains key to successful crisis management. This is especially the case considering that the solution devised in this occasion – the merger between the two local G-SIBs – would not be available in the future (as there would be no local bank in Switzerland with the commercial interest and financial capacity to purchase the only remaining G-SIB). Consolidation with a foreign player was not considered. In addition, the concentration of large and complex banks may make the Too Big To Fail (TBTF) problem more difficult to address.

In the Banking Union, resolution planning for large banks has been largely based on the open bank bail-in (OBBI) approach. Since in most cases resolution authorities may find it difficult to find a purchaser for large and complex banks at short notice, the OBBI has been the preferred tool for the majority of resolution plans. However, there is also a need to further work on transfer tools, either in combination or as alternative to the OBBI, according to the scenario and type of bank. We recommend flexibility and optionality in resolution approaches, following the example of other authorities both inside and outside the EU.

[\(iii\) The role of public liquidity backstop mechanisms in restoring market confidence during and after resolution \(Section 5\)](#): as confirmed by recent events, liquidity should be promptly made available to firms in and after resolution, in order to quickly restore market counterparties' confidence in the resolved bank. In the case of Credit Suisse, we have witnessed the huge amount of funding put at the bank's disposal, which helped to restore market confidence and was fully reimbursed after a short period of time. At international level⁷, a reflection continues on the design features (size, duration, collateral, etc.) of such mechanisms, and on the assessment of whether the lack of an adequate and explicit public liquidity backstop arrangement could be perceived as making resolution less credible.

In this respect, different features of the public temporary liquidity backstop mechanisms in place in different jurisdictions contribute to ensuring their credibility and effectiveness – that is, from an individual perspective, to meet and accommodate funding needs of solvent firms facing temporary liquidity pressure and, from a system perspective, to ensure the stability of the wider financial sector.

⁷ FSB (2024).

In the US and Swiss cases, the relevant frameworks allowed the features of the public liquidity backstop to be tailored to the needs emerging in the turmoil. The Banking Union framework benefits from a Single Resolution Fund managed by the SRB, and a Common Backstop provided by the European Stability Mechanism (“ESM”), as soon as the latter is ratified. There is however a shortcoming in tail scenarios, that is, liquidity needs arising from the failure of a large and complex bank, where the amount of funding needed could be similar to that employed for Credit Suisse.

In this Paper, we assess different contributions to addressing this issue at Banking Union level, and we conclude that a public funding backstop in the form of a guarantee, resting on the EU budget, would represent a truly and effective European solution. In particular, the public guarantee could be provided by the European Commission, backed by the EU budget. Alternatively, the public guarantee could be provided by the SRB, backed by either the issuance of long-term bonds or the promise to recoup any expense from the banking industry. An effective public and temporary liquidity backstop would align the Banking Union with the US and the UK regime, and it would enhance the credibility and effectiveness of the EU resolution framework.

The analysis of the topics highlighted above follows a similar structure throughout the paper. We illustrate the three topics, first providing an overview of the main elements characterising the subject under discussion, as well as the main practical and theoretical issues that have emerged so far; then we introduce a European perspective.

2. The 2023 banking turmoil: the events

In the US, the so-called regional banks crisis started with the failure of SVB, the 16th American largest bank in terms of total assets (\$211bn at end-2022).⁸ Between 2019 and 2022, the bank saw a spectacular growth in uninsured deposits, which funded a non-diversified exposure to government securities, mainly “Held-to-Maturity”.⁹ When the FED increased interest rates, the value of government bonds held by SVB deteriorated, raising concerns about SVB’s capital position.¹⁰

On 8 March 2023, the bank announced that: (i) it had sold \$21bn of securities, resulting in a \$1.8bn after-tax loss, and contextually that (ii) it was seeking to raise \$2.25 billion in capital. The next day SVB experienced a bank run of historically unprecedented speed, facilitated by digital payment technologies and the strong commonalities between SVB depositors.¹¹ In a single day, SVB lost more than \$40bn of deposits, roughly 30% of its deposit base, and another \$100bn was about to leave on 10 March, had the California Department of Financial Protection and Innovation not closed the bank.¹² The FDIC, appointed as receiver, established a vehicle called the Deposit Insurance National Bank of Santa Clara (DINB), which would have provided insured depositors with quick access to their funds.¹³ Uninsured depositors, however, lost access to their accounts above the DGS coverage, obtaining only receivership certificates to recover their uninsured funds via the liquidation procedure. The treatment of uncovered deposits, and their exposition to potential losses, triggered a wider confidence crisis among other regional banks. On Saturday 11 March, another US lender, Signature Bank – which also presented a significant concentration of uninsured depositors – experienced a run which would not have permitted it to meet its obligations had it opened on Monday.

The magnitude of the runs, coupled with the need to avoid contagion to other regional banks, prompted the FDIC and the Federal Reserve to recommend to the Secretary of the Treasury the adoption, on 12 March, of a “systemic risk determination”, enabling the extension of deposit insurance coverage to all depositors of SVB and Signature Bank. The FDIC changed its procedures from the set-up of DINB to the establishment of two bridge banks, to which all deposits (including uninsured ones) were transferred. The two temporary entities were subsequently sold to competitors: First Citizens Bank bought SVB and New York Community Bancorp purchased parts of Signature Bank.¹⁴ At the same time, the Federal Reserve Board, on top of its primary credit discount window, created a dedicated liquidity program, the Bank Term Funding Program (see Section 5). Despite such efforts, a third US regional bank, the San Francisco-based First Republic

⁸ SVB was largely active in the California Silicon Valley region, whereby it mainly extended loans (and offered wealth management services) to the high-tech sector and, at the same time, it raised funds from the same industry, largely in the form of unsecured deposits.

⁹ Meaning that, being accounted at amortised cost, any losses on these securities provoked by higher rates would be accounted for only at their sale.

¹⁰ Also, under the applicable US framework, the bank, given its size, was not required to meet liquidity requirements (in the form of a Net Stable Funding Ratio and/or, more importantly, a Liquidity Coverage Ratio). According to Feldberg (2023), the application of the LCR to SVB would have led to a LCR breach by end-2022 (i.e. the LCR would have amounted to 75%, 25% below the minimum). Both SVB and Signature Bank were not adequately prepared to tap the FED’s discount window, lacking the capacity to promptly identify and use adequate collateral. The point is analysed by Barr (2023b) and McLaughlin (2023).

¹¹ See Rose (2023) and Cookson et al. (2023).

¹² A similar run, encompassing roughly 30% of the deposit base, also affected on 10 March SVB subsidiary in the UK – which was, in fact, a rather small bank, with total assets amounting to roughly GBP 12bn. SVB UK, while predicated to fail under ordinary insolvency procedure, was eventually put into resolution and sold to HSBC by the Bank of England.

¹³ See FDIC (2023c). The DINB was established on Friday 10 March 2023, and insured depositors were expected to have full access to their deposits no later than Monday morning, 13 March 2023.

¹⁴ First Citizens Bank purchased about \$72 bn in loans at a discount of \$16.5 bn, as well as all deposits for a sum of \$16.5 bn. Approximately \$90bn in SVB securities and other assets were not included in the deal, and left behind in the FDIC receivership. New York Community Bancorp purchased \$38bn in assets, including \$12.9bn in loans, at a discount of \$ 2.7bn. See Hirsch (2023).

Bank, fell victim to the contagion.¹⁵ The FDIC sold all the deposits and most of the assets of First Republic to JP Morgan, following a purchase and assumption agreement (see Section 4), this time without using the systemic risk exception.

During the same period, the Swiss Globally Systemic Important Bank (“G-SIB”) Credit Suisse also began to experience a confidence crisis. Since the GFC, the bank had been involved in a number of international scandals, which dented its reputation and credibility.¹⁶ In October 2022, Credit Suisse came under strong liquidity pressures, with large outflows of assets and deposits, mostly from high-net-worth management clients outside of Switzerland.¹⁷ While the bank was able to withstand the pressure, the crisis left the institution in a precarious situation to face the 2023 banking turmoil. When the management delayed the publication of the 2022 Annual Report, and a key shareholder seemed to communicate that it would not provide further support, the bank was again subject to a run, this time involving not only wealthy clients, but all depositors.¹⁸

On March 15, the Swiss Central Bank attempted to calm the market by extending a CHF50bn line of Emergency Liquidity Assistance (“ELA”) to the bank. On March 19, Credit Suisse was merged, outside of resolution, with UBS. The Swiss authorities facilitated the deal by: (i) granting UBS a second loss guarantee¹⁹ and (ii) extending two new Central Bank liquidity lines, jointly amounting to CHF 200bn (see Section 5). The merger deal was based on an exchange ratio of 1 UBS share for every 22.48 Credit Suisse shares held, as well as the full wipe-out of CHF 16bn of AT1 instruments.²⁰

The set of measures adopted by the US and Swiss Authorities safeguarded financial stability, avoiding financial contagion. The events have nevertheless led to reflections, still ongoing, on the need to improve certain procedural and operational elements of the resolution and supervisory framework, in order to strengthen its effectiveness and reliability (see Box 1).

¹⁵ First Republic Bank funded its roughly \$230bn balance-sheet with \$104bn deposits, of which 68% uninsured. The bank was subject already in March to liquidity pressure, which prompted eleven US banks to offer \$30bn in deposits, in an effort to curb the panic.

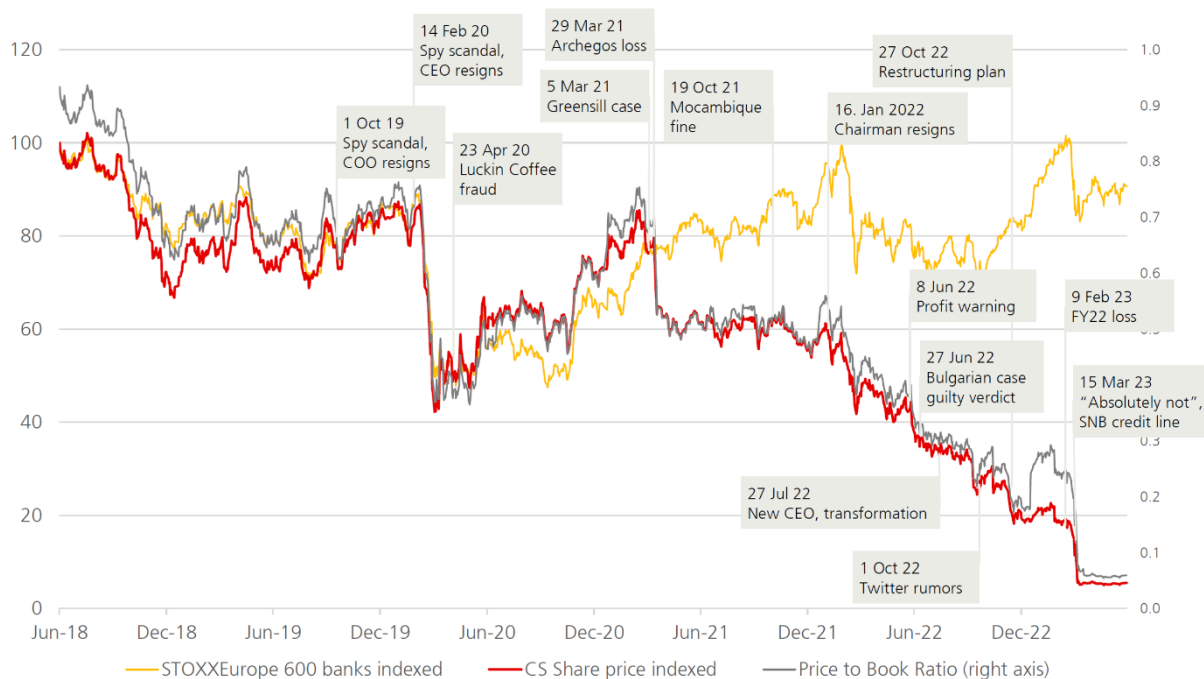
¹⁶ See FINMA (2023a). Recurrent scandals and mismanagement cases – the Mozambique case, the surveillance affair, as well as the Greensill and Archegos cases – eroded the bank’s reputation, dented its profitability, and led to customers, investors, and public authorities alike losing trust in the entity.

¹⁷ FINMA (2023a). The total deposit outflow in Q4 2022 was equal to CHF 138bn.

¹⁸ FINMA (2023a).

¹⁹ Under this guarantee amounting to up to CHF 9bn, the government would bear losses only after UBS would have borne a first loss of CHF 5bn.

²⁰ For an analysis of the lessons on Credit Suisse, see FINMA (2023a). For a broader reflection on Too-Big-To-Fail (TBTF) provisions in Switzerland, see Swiss Federal Council (2024).

Chart 1: Credit Suisse – market indicators²¹

Box 1: 2023 Banking Turmoil, BCBS/FSB Lessons Learnt for Supervisory and Resolution Authorities²²

Takeaways for supervision:

- **Liquidity risk.** There may be a need to review supervisory standards and practices in relation to liquidity requirements, re-assessing the frequency of monitoring and the approach to concentration risks. The potential impact of unrealised losses on the liquidity position of the bank – and more generally the accounting classification of liquid assets – also deserves further assessment.
- **Implementation of the Interest Rate Risk in the Banking Book (IRRBB) standard across jurisdictions.** Interest Rate Risk was central to the crisis of US regional banks. Although such entities were only partially subject to IRRBB, authorities will further assess whether the current pillar 2 approach can effectively mitigate interest rate risk.
- **Analysis of Additional Tier 1 (AT1) instruments and their role in the capital framework.** Despite a difficult situation, Credit Suisse has continued to replace AT1 instruments and to pay AT1 coupons, in order to avoid negative signalling effects. There is therefore a need to reflect on the role of AT1 in the capital framework, particularly their capacity to absorb losses on a going-concern basis.
- **Scope of the Basel Framework.** The crisis has shown that the failure of regional banks can trigger systemic consequences, calling for further analysis on the limited scope of application of the Basel (and resolution) framework, currently recommended only to G-SIBs.

²¹ Reproduced from the Report of the Expert Group on Banking Stability (2023).

²² Basel Committee on Banking Supervision (2023). FSB (2023a).

Takeaways for resolution:

- **Effective public sector funding backstop.** Authorities need to have in place credible liquidity backstops to timely restore market confidence when a bank is resolved (see Section 5).
- **Legal issues in executing a bail-in across borders.** The demise of Credit Suisse highlighted the need to clarify how securities laws (prospectus and disclosure requirements) apply to the cross-border conversion of TLAC bonds to equity in the context of the open-bank bail-in.
- **Choice of resolution strategies and optionality of resolution tools.** Authorities should retain flexibility when carrying out their resolution planning activities, preparing for several crisis scenarios, without hindering the level of preparedness in the execution of the preferred resolution strategy (see Section 4).
- **Post-stabilisation restructuring plan.** Resolution authorities need to prepare a credible restructuring plan, capable of restoring market confidence in the business model of a resolved bank in the post-resolution period. Timely and efficient communication to the market is also essential.
- **Communication and coordination between home and host authorities.** Considering the increasing speed of bank crises, it is important to enhance coordination between home and host authorities, both inside and outside Crisis Management Groups (“CMGs”). Authorities should also coordinate their communication strategies and communication outputs.

3. Bank runs, deposit insurance, and resolution

3.1 Preserving banks' franchise value and ensuring the stability of the deposit base in crisis: the role of DGSs

The 2023 banking turmoil was a reminder of the potentially destabilising role played by uninsured deposits in modern banking systems. In the case of SVB, the peculiar liability structure of its balance-sheet – a funding structure heavily reliant on a concentrated base of uninsured depositors who did not face significant transaction costs in coordinating their behaviour – coupled with its particular business model, offer a good account of the causes of the turmoil. Put differently, deposit stability is critical for safeguarding financial stability.

This is due to the function deposits play in the traditional banking business model.²³ Deposits are not only relevant for the funding of the banking business – and considered, under this light, in their source of funding role – but for most banks, deposits are *themselves* the business, in the sense that taking deposits from retailers and corporations, who represent bank clients, constitutes and contributes to the franchise value of the bank.²⁴

From a bank's balance-sheet perspective, the importance (and the value) of deposit franchise, a direct consequence of the bank's maturity transformation function via deposit-taking, lies in: the ability to finance part of their assets via a source of funding that is usually not sensitive to, and remunerated at rates lower than, market interest rates, provides banks with a natural hedge to interest rate risks emerging on their balance-sheet.²⁵ Yet such a natural hedge may fail to fulfil its function exactly when it is most needed, as the SVB case has shown – i.e., the deposit franchise may be runtable.²⁶

For all the above elements to be preserved – i.e., for safeguarding financial stability; for the deposit franchise value to be maintained and, as a consequence, for the deposit hedge to work – deposits must remain in the bank. This result is primarily achieved by DGSs, which have historically represented the first and most direct tool to avoid bank runs²⁷ and protect insured depositors.²⁸

²³ See Restoy (2023).

²⁴ Along this line, it has been said (Armour et al. (2016)) that “for a bank, unlike a non-financial firm, the composition of the balance-sheet is essential to its value. The business of a bank is not just about screening and monitoring when extending credit to firms and households but also about extending liquidity services to depositors in the form of claims that are sum certain and continuously redeemable. One might go so far as to say that the business of a bank is financing medium- and long-term credit claims with deposits. This means that an all-equity bank will be a less valuable bank than one funded at least in part by deposits. The idea of the “irrelevancy” of financing to business project value does not hold where the business project itself is a particular form of financing”. See also Davies (2015).

²⁵ See Drechsler et al. (2021).

²⁶ See Drechsler et al. (2023).

²⁷ Economic literature on bank-run phenomena is hefty. From a taxonomy perspective, there are at least two different models trying to explain the phenomenon, and namely:

(i) Under a first model (so-called “panic-based model”), bank-run phenomena are not correlated to fundamentals, for instance, the deterioration of the bank's financial position or changes in the economic cycle. Under this model, depositors withdraw their deposits for reasons exogenous to the model itself. The spread of the panic among depositors, who anticipate that other depositors may start withdrawing their deposits, triggers the run – in a classic example of a self-fulfilling prophecy. In this regard see, among others, Diamond and Dybvig (1983).

(ii) Under a second model (so-called fundamental-based model), depositors' behaviour is conditioned to economic cycle outcomes. So, under this model run phenomena represent answers to investors' expectations about future spread of fundamental shocks to the financial sector. In this regard see, among others, Gorton (1988).

²⁸ Liquidity risks are not only tackled via effective deposit guarantee schemes – which though address these risks only to the extent that they originate from the behaviours of depositors, and which are also “preventive” in nature, in the sense that they try to tame liquidity outflow from arising in the first place. Prudential liquidity and funding requirements aim at keeping the business in going-concern – or at least, to keep it in going-concern as long as possible, ahead of possible supervisory interventions – when eventually liquidity stress happen. They operate both by mandating the bank to (i) maintain a stock of High Quality Liquid Assets (“HQLA”) which could be easily sold on the market once creditors' claims fall due and are not rolled-over, to cover cumulated net liquidity outflows over a 30-day period (so-called “Liquidity Coverage Ratio”) and (ii) base its funding structure on a certain amount of stable source of funding (so-called “Net Stable Funding Ratio”).

DGSs act as stabilisers both at micro- and macro- level. At micro-level, DGSs protect the accounts of single depositors – chiefly retailers/households – by reimbursing them, should the bank be declared failed and in liquidation. Yet, in order to avoid the creation of moral hazard incentives, this protection is anchored to clearly defined limited coverage levels.²⁹ At macro-level, DGSs contribute to financial stability by modifying ex-ante covered depositors' incentives to run.

In the case of the 2023 turmoil, however, the safety net provided by the FDIC's Deposit Insurance Fund ("DIF") did not prevent the liquidity outflows stemming from US regional banks.³⁰ This can be explained with the large holdings of uninsured deposits which characterised such banks – it is worth emphasising that uninsured deposits represented respectively 89% and around 94% of the total deposit base of Signature bank and SVB.³¹ While such banks were outliers in terms of deposit composition, displaying an abnormal concentration of uninsured depositors not facing significant transaction costs in coordinating their behaviours, their crisis has nevertheless triggered an intense policy discussion on the future of deposit protection. The question is whether one of the crucial characteristics of today's DGS, namely the limited protection provided to depositors by a pre-defined coverage level, should be revisited – and, bearing in mind, at the same time, that any increase of the protection provided to depositors could also incentivise moral hazard behaviours, undercutting overall market discipline.³²

Institutions, academics and practitioners have recently addressed the topic of the adequate coverage by DGS, proposing a number of reforms. We list them below, mentioning for each option pros and cons.

- (i) **Unlimited coverage of all deposit contracts³³**: this is arguably a radical option which would have the effect of removing altogether every incentive on depositors to run – and thus it would contribute to the greatest degree to financial stability. Yet, it would also be extremely expensive, as the unlimited coverage would be footed by the banking industry via increased contributions to the DGS.³⁴ Furthermore, the redistributive effects of such proposal should be carefully considered, as it would imply a redistribution of resources from competitive banks to their weaker peers, as well as of cost from the banking industry to consumers – given that at least some of the additional costs would trickle down to banks' clients.³⁵ Finally, it would also contribute to moral hazard dynamics.
- (ii) **Targeted coverage of certain categories of deposits (in particular, transactional accounts used for payroll purposes)³⁶**: here we need to distinguish between so-called transaction accounts, held at a bank – usually by small- and medium-sized enterprises ("SMEs") – for payroll and transactions functions, and deposits held for investment purposes.³⁷ Only the former category would obtain additional coverage, given their essential role for nowadays market economies, in light of their role as means of payment. The most important drawback of this proposal is represented by the difficulty to establish effective criteria to distinguish between "investment" and "operational" deposits, to avoid arbitrage behaviour.³⁸ Also, the targeted

The calibration of these two standards, which have been called into question in the context of the 2023 banking turmoil, are not object of analysis in this paper. For their features, characteristics and objectives see BCBS (2014a) and BCBS (2014b). For some reflections on their calibration after the recent banking turmoil, see BCBS (2023).

²⁹ See IADI (2014), Principle 8.

³⁰ With a funding structure heavily reliant on a limited and concentrated number of uncovered deposits (at year-end 2022, 94% of SVB domestic deposit base was above the coverage threshold) and a single day deposit outflows amounting to \$42bn (roughly the 24% institution's deposit base) it couldn't be realistically expected that the \$250,000,00 coverage provided by the FDIC would have modified the incentive of such depositors to run.

³¹ Restoy (2023).

³² Such a remark is common and widespread, see for instance IADI (2014), FDIC (2023e), Restoy (2023) and Perotti (2023). The argument holds that the bank's constituencies could be incentivised to take on higher risks than those they would take in a world without a deposit safety-net, as DGS would by definition remove any incentives for depositors to monitor bank activities and accordingly tailor the remuneration they demand to the bank's risk profile. In reality, evidence is rather mixed on this point, i.e., there is both evidence that deposit insurance can increase bank risk-taking and evidence that it does not. For a brief analysis in this respect, with relevant literature review, see FDIC (2023a), in particular footnote 99.

³³ See FDIC (2023e); Heider et al. (2023) and Cecchetti et al. (2023a).

³⁴ This is a recurring remark. *Inter alia*, see Restoy (2023).

³⁵ Restoy (2023).

³⁶ See FDIC (2023e). See also G30 (2024).

³⁷ The focus on SMEs only, and not on larger firms, is justified by the fact that usually the latter, unlike the former, are better positioned and equipped to manage their cash resources. See Cecchetti et al. (2023a).

³⁸ In this regard there are some presumptive features that could be emphasised – for instance the fact that the depositor has contractually agreed not to receive any interest payment on the sum deposited. Yet, while a non-interest-bearing account would signal the "non-investment" nature of the claim, it would fall short of representing an "operational" trait. On this point see also G30 (2024). Another presumptive trait that could be emphasized pertains to the fact that investment and saving accounts usually impose a penalty for early termination.

On the challenges posed by arbitrage behaviours, see Cecchetti et al. (2023a).

coverage would still need to be anchored to a specific threshold, considering that it should not amount to an unlimited coverage.³⁹

- (iii) **Adjusted insurance limits in an incentive-aligned manner⁴⁰:** Under this proposal the coverage limit would represent a function of the bank's risk-profile – that is, banks presenting less risky business models, and thus a reduced risk of failure, would enjoy higher coverage for their deposits. The assessment should be based on indicators related to quantity and quality (for instance, stability of the funding sources) capable of curbing banks' incentives to undertake risky activities. This option would however disrupt the equality principle between deposits, as depositors in certain banks would be more protected than others.
- (iv) **Implementation of “Minimum Balance at Risk” provisions for uninsured depositors⁴¹:** Such a proposal is built on the need to create a trade-off between uninsured depositors' immediate access to the liquidity of their claims – via immediate withdrawal – and the risk of loss exposure of their deposit's principal amount, which in turn should reduce run incentives. Namely, the Minimum Balance at Risk approach would work as follows: uninsured depositors would be granted ordinary and unlimited access to their sight deposits up to a certain amount of the claims par value – say, up to the 95% of their nominal amount. Access to the remaining amount would be delayed for a given time-period, during which this not-withdrawn part would be subordinated to claims of those (uninsured) depositors who did not withdraw in excess of the limit (the so-called “Minimum Balance at Risk”). Thus, former depositors would potentially absorb losses with priority to the latter, should the bank fail. Such a mechanism would in theory provide depositors with an incentive not to run entirely on their banks, should they want to avoid the risk of losses being allocated on their “minimum balance” principal amount.

This option appears radical if only one considers how the “money-like nature” of deposits, namely their convertibility at face-value in an equivalent means of payment, is here put into question. It would also constitute an expensive option, as uncovered depositors would likely demand higher compensations to the bank for the increase risk they would face – moreover, the charges should be extremely high to effectively tame run incentives. Finally, implementing such option would require the relevant insolvency cascade to be amended, given the fact that certain claims would see their ranking being modified only temporarily. Setting aside the complexity this would entail, from a resolution angle this ranking modification may also raise certain *par condicio creditorum* issue, given that similar claims would be treated differently.

The proposals analysed above all aim at taming run incentives by focusing on the liability-side of the bank's balance-sheet: an effective DGS, by means of an adequate coverage level, should guarantee or improve the stability of deposits – which in turn positively contribute to the bank's franchise value. Another proposal pursues the same goal of safeguarding financial stability and curbing run incentives on depositors, but it is centred on the assets-side of the balance-sheet. In particular, in the US the following proposal has been formulated:

- (v) **Unlimited and uninterrupted access to central bank liquidity by means of assets pre-positioning⁴²:** Under this proposal the central bank would guarantee to credit institutions an unlimited and uninterrupted access to a credit line – which should tame, if not avoid, the outburst of run behaviours – conditioned on the latter posting high quality collateral (i.e., money and central bank reserves) with the central bank. Collateral pre-positioning would amount to a requirement placed upon the bank, which would be entitled to issue short-run liabilities only up to the liquidity value of such collateral. In particular, banks would be required to pre-position enough collateral at the central bank to meet

³⁹ See FDIC (2023a), whereby, though no proposal is made, it is remarked how “a deposit insurance limit of \$2.5 million for accounts [...] would likely cover payroll for a large proportion of small and medium-size business payment accounts”. In Japan, by contrast, full coverage for certain payment accounts is in place– see FSB (2023).

⁴⁰ G30 (2024).

⁴¹ Cipriani et al (2023). The proposal, at least in its intended goal, somehow reminds us of the limited convertibility rule applying to US money market funds (the 2014 SEC Rule 2a-7) under which the fund's board may impose a liquidity fee of up to 2% (so-called “swing pricing”) or temporarily suspend redemptions (so-called “gating”), should (a) the fund's weekly liquid assets fall below 30% of its total assets and (b) the fund's board determines that imposing a fee or a suspension is in the fund's best interests. See also Perotti (2023).

The major cons of rules of these kinds lie in their potential self-fulfilling nature, that is, the anticipation of a liquidity fee or a suspension among depositors may incentivise the latter to pre-emptively withdraw.

⁴² See G30 (2024) and Hsu (2024). With specific reference to the US regime, highlighting the need to foster readiness in collateral pre-positioning at the discount window as well as preparedness in accessing it in light of the events of March 2023, see Barr (2023b). For a more “extreme” version of these proposals, whereby the central bank would act as a “pawnbroker for all seasons”, see King (2016), Tucker (2023) and Cecchetti et al. (2023a).

all or part of their “runnable obligations”. “Runnable obligations” include all liabilities, except for capital, subordinated debt, long-term senior debt, and other claims with (remaining) maturities of more than one year, as well as all fully insured deposits.⁴³ The implementation of an option of this sort would remove altogether any incentive to run in the midst of a crisis, as depositors claims would be honoured thanks to the liquidity obtained by the central bank. However, this would be the case only if there is proper communication to these parties. Also, and for the same reason, there may be no longer a need to have in place an effective DGS.

Different concerns have been raised about this proposal.⁴⁴ First, the central bank role in setting collateral haircuts may potentially interfere in the allocation of credit. Second, a pre-positioning obligation would, in practice, “lock away” an expanding number of banks’ unencumbered assets, preventing their use in private funding markets – and, in a sort of a feedback loop, the more these assets are pre-positioned at central bank level, the less of an active market providing price signals for valuation and haircut purposes there will be.⁴⁵ Yet, one could rebut that such a scenario is not likely to arise if banks pre-position assets they will never use for private funding (credit claims, Residential Mortgage-Backed Securities, etc.).

In any case, on the back of SVB crisis – which did not have access to the FED discount window - in the US the authorities have made clear that insured deposit institutions should practice the use of the FED discount window in case of emergency, through stress tests and simulations; at the same time, proposals have also been made on how to avoid stigma related to discount window access.⁴⁶

3.2 Preserving banks’ franchise value and ensuring the stability of the deposit base in crisis: the role of resolution

As also shown by the SVB crisis, DGSs are not sufficient by themselves to ensure deposit stability. As a result, in addition to market discipline, policy-makers have established other public safeguards, such as prudential regulation (imposing solvency and liquidity requirements), supervision, and, for what especially concerns us in this paper, resolution regimes. In this section, we focus on how resolution can contribute to deposit stability – ultimately the main macro-objective of DGSs, as this occurs through a variety of channels.

First, an important contribution to deposit stability is provided by the main resolution requirement, namely the obligation of banks to maintain a minimum amount of Loss Absorbing Capacity (TLAC) in the form of long-term subordinated debt, which is expected to absorb losses in resolution.⁴⁷ In other words, the presence of TLAC constitutes an additional layer of security for uncovered depositors, curbing their incentives to run, as there is a cushion of non-runnable liabilities expected to face losses before them and which can contribute to the recapitalisation of the failing entity.⁴⁸ This is an element that has been widely raised in the context of the SVB failure, as the bank was not mandated to meet such a requirement under the US framework.⁴⁹ In particular, the obligation to maintain such a layer of debt could have restrained depositors from running (or at least, in the form and at the speed the run took place in SVB), as they would have been reassured that losses emerging on SVB’s assets would have been absorbed by subordinated debtholders in the first place, causing lower losses to the Deposit Insurance Fund. Along this line it has to be read the recent FDIC proposal to require large banks with total assets of \$100 billion or more to maintain a layer of long-term debt.⁵⁰ In the EU, there is already in place a subordination requirement for banks with total assets exceeding EUR 100bn, consolidated at the level of the resolution group (so-called “Top Tier Banks”), besides the specific requirements for G-SIBs.

Second, an effective resolution framework strengthens market discipline, which

⁴³ Capital, subordinated, and long-term senior debt are not considered “runnable liabilities”, given their remaining maturity does not “represent liquidity risks that need to (or should) be addressed by LoLR”.

In the proposal advanced by Hsu (2024), the new targeted regulatory requirement is centred around the liquidity value of collateral pre-positioned at the discount window in addition to reserves (i.e., the numerator of the ratio) against ultra-short-term liabilities (i.e., the denominator of the ratio).

⁴⁴ See Cecchetti et al. (2023a).

⁴⁵ Kaminska (2024).

⁴⁶ See Barr (2023b) and Hsu (2024).

⁴⁷ FSB (2015).

⁴⁸ Ringe (2017).

⁴⁹ Gruenberg (2023); Cecchetti et al. (2023b); Dewatripont et al. (2023) and Restoy (2023).

⁵⁰ FDIC (2023b).

decreases moral hazard and represents a safeguard against excessive risk-taking. On the one hand, banks' management cannot count on a public bail-out to escape accountability and, on the other hand, subordinated debt holders – exposed to the bail-in risk – are expected to effectively monitor the bank's activities. In the EU, empirical analysis shows that MREL debt holders tend to monitor banks, while the adoption of the resolution framework has reduced bail-out expectations.⁵¹

Third, and most importantly, a successful resolution regime can further contribute to the overall stability of the deposit base by allowing the orderly exit of failing banks, in a procedure which preserves the franchise value of the failing institution, which in turn increases depositors' confidence in the banking system. For example, resolution authorities can quickly recapitalise a bank via the bail-in when problems become pressing, regaining the confidence of depositors before run risks materialising.⁵² However, the most powerful resolution tool to protect the franchise value is arguably represented by the sale of business, that is the resolution authority's ability to sell the entire deposit base (including uncovered deposits) of the failing bank to a competitor. For example, the FDIC in the US has a long tradition of transferring all deposits (including uncovered) if this meets the least cost test, namely if the financial contributions provided by the DIF to the transfer are less expensive than a deposit-by-deposit payout in liquidation.⁵³ In exceptional cases, in order to safeguard financial stability and avoid contagion, even if the transfer of uncovered deposits fails to meet the least-cost-test, US authorities can still transfer the entire deposit base using the so-called systemic risk exception.⁵⁴ As a result, uncovered deposits have rarely suffered losses in the US; since 1992 only 20% of the failures involved losses for non-covered depositors, with an average loss of 28%.⁵⁵ While it could be argued that the treatment of uncovered depositors in US has a bailout component, it is undeniable that it has positive effects for deposit stability.⁵⁶ A timely transfer of the entire deposit base preserves the franchise value of the failing bank, avoids piecemeal liquidation, and curbs the run incentive of both covered and uncovered depositors. For example, the 2023 decision of US authorities to activate the systemic risk exception for SVB and Signature Bank stopped the panic among uncovered depositors in regional banks, which were prone to move their accounts to larger institutions, especially G-SIBs, which were deemed to be safer.

In conclusion, the resolution framework and the DGSs reinforce each other in their mutual objective of preserving deposit and financial stability. The resolution framework preserves business continuity and critical functions, avoiding the piecemeal liquidation and loss of franchise value of the bank at the point of exit. In turn, DGSs contribute to the stickiness of covered deposits, while also providing funding in resolution under certain conditions (compliance with the "least-cost-test").

3.3 Preserving banks' franchise value and ensuring the stability of the deposit base in crisis: the European framework

In the European Union, deposit insurance is provided at the national level, according to the provisions of the DGS Directive ("DGSD"), which ensure a certain level of harmonisation.⁵⁷ To understand the effectiveness of national DGSs to preserve deposit stability during a crisis, the first element to consider is the adequacy of the current coverage level. In accordance with Article 6 of the DGSD, Member States must "ensure

⁵¹ Cutura (2020). However, some commentators have criticised the capacity of MREL debt-holders to exert market discipline, arguing that the complexity of the resolution framework would prevent debt-holders from exercising their monitoring role. See for example Martino (2020).

⁵² For example, EU resolution authorities can apply the Write Down and Conversion ("WDC") of capital instruments (Art.21 SRMR) outside resolution to preventatively recapitalize the bank. However, the bail-in tool can act as stabilizer only if resolution authorities act pro-actively, addressing not only the capital shortages of the bank via the bail-in, but also the root causes of the crisis (mismanagement, failing business model, etc). This will likely require the use of other measures in combination with the bail-in (for example, the replacement of the bank's management).

⁵³ For the FDIC approach to resolution, see section 3.4.

⁵⁴ The Systemic Risk Exception allows to forego the Least-Cost-Test to address systemic risks. It is determined by the Treasury Secretary, in consultation with the US President, upon the written recommendation of at least two-thirds of the FDIC's and the FED's board. Any loss incurred by the DIF must be repaid by the banking sector through special fees ("assessments"). The exception was determined only seven times, five during the GFC and two in 2023. See Labont (2023).

⁵⁵ FDIC (2023).

⁵⁶ While it has been argued that in the US there would be a de facto 100% deposit insurance coverage, the legal treatment of uncovered deposits is still different than covered amounts – as the protection of the former is provided only on a case-by-case, exceptional basis, while covered deposits are fully protected. Additional research is needed to understand whether uncovered depositors still exert more market discipline than covered depositors, especially in light of recent events.

⁵⁷ Directive (EU) 2014/49/EU of the European Parliament and the Council of 16 April 2014 on deposit guarantee schemes.

that the coverage level for the aggregate deposits of each depositor is EUR 100,000”.⁵⁸ The coverage level in the EU is therefore lower than the US, where deposits are currently covered up to \$250,000.⁵⁹

A recent report by the European Banking Authority offers a preliminary analysis of the adequacy of the EU coverage level.⁶⁰ In particular, the European Commission asked the European Banking Authority to provide an analysis, among others, of the current deposit coverage level – also in light of the events that took place in the United States and in Switzerland – considering scenarios (and the associated costs vis-à-vis the benefits) where the current coverage level would be increased to Euro 150,000 or Euro 250,000 for natural persons and up to EUR 1,000,000 for the eligible legal persons (i.e., corporates).

The EBA analysis showed that increasing the current coverage level would bring limited added value in terms of protection, yet significant costs for DGSs: *“the coverage level of Euro 100,000 continues to be well above the amount an average depositor holds, despite inflation over said period. The analysis shows that a potential increase of the coverage level would have no impact on the vast majority of depositors, as they are already fully covered anyway. [...] any of the assessed potential increases in coverage, while being costly, would have positive but limited impact on financial stability and consumer protection, and a somewhat negative impact on moral hazard”*. Namely, the EBA points out that *“The data collected shows that currently across the European Economic Area (“EEA”) countries 96% of depositors are fully covered, meaning that, in case of bank failure, they would be paid back the full amount of their respective deposit. The 4% of depositors that are not fully covered are mostly companies, and, despite being few in number, they hold more than half of deposits held in the EEA”*.⁶¹

A recent European Central Bank (“ECB”) analysis focused on the adequacy of run-off rates and, more generally, on the assumptions underpinning the Liquidity Coverage Ratio (“LCR”) framework.⁶² It is observed that *“the March turmoil has not resulted in significantly higher outflow rates for institutions covered by ECB banking supervision”* and that *“following the events of March, contagion fears remained short-lived amid solid euro area bank fundamentals. Significant institutions in the euro area did not experience considerably higher net outflow rates since March 2023”*. These observations are in line with the fact that in Europe SVB-like business models (extreme concentration of uncovered deposits all raised from the same industry-sector) have not been recorded.

Overall, the analysis mentioned seems to point, at least at the EU level, toward the non-necessity to call for an increase of current DGS coverage levels for natural persons’ deposit accounts. By contrast, for corporates deposit accounts the EBA analysis appears less clear-cut in its conclusion, as it permits only to conclude that enhancing their protection by increasing their coverage level to EUR 1,000,000 would have limited impacts – even at this coverage level, on average there would still be less than half of eligible deposits fully covered, so run risk would not be fully addressed. On the one hand, EU banks are exposed to the risk of runs originating from a low number of depositors, holding large and uncovered balances. On the other hand, it seems very difficult to meaningfully cover such deposits without substantially increasing moral hazard.⁶³

On the whole, from a financial stability perspective, it seems that, at international level (including European level) a better understanding of banks’ deposit structure would be useful to monitor and assess system-wide vulnerabilities and bank-level liquidity risks. Sometimes authorities have more information on banks’ assets than on banks’ deposits. A first step to address risks originating from banks more sensitive to runs (i.e., where the ratio of uninsured depositors may lead to imbalances) could thus be to subject such entities to closer and more intrusive supervisory monitoring.⁶⁴ A second step could be to assess deposit maturities, the type and concentration of deposits, eventually imposing concentration limits on uncovered deposits, similarly to the large exposure regime already applied on the banks’ asset side.⁶⁵

⁵⁸ In the analysis we assume that Article 6 is consistently implemented across the EU. However, it is worth emphasising that the EBA published a number of opinions highlighting how the high number of national options and discretions have led to different levels of protection across member States, see European Commission (2023c).

⁵⁹ The EU coverage level is also lower than Australia and Norway, while Switzerland and the UK offer similar coverage limits.

⁶⁰ See EBA (2023).

⁶¹ Similar messages and figures – encompassing a global span – are reported in IADI (2023b).

⁶² See Wildmann et al. (2023).

⁶³ See the reservations we expressed in relation to the proposal to extend the DGS to all deposits in section 3.1.

⁶⁴ More intrusive supervision constitutes one of the main lessons learnt of the crisis highlighted by the Basel Committee (2023).

⁶⁵ A concentration limit would intervene on excessive shares of uninsured deposits or an excessive share of deposits among the top ten largest providers of short-term funding.

An important issue is represented, in Europe, by the low possibility of EU DGSs to support the continuity of the deposit franchise in resolution (and also in measures alternative to piecemeal liquidation). As we have seen in the previous paragraph, in addition to their classic paybox function in liquidation, DGSs can also have a funding role in resolution, acting as loss absorbers and risk minimisers. Although national DGSs can intervene in resolution under Article 109 BRRD, such intervention is currently constrained by the EU legal framework – particularly by the “super priority” enjoyed by the DGSs in the creditor hierarchy. Thanks to the super priority, DGSs subrogated to covered depositors after the exercise of the paybox function are the first in line to recover losses in a liquidation procedure. As a consequence, their intervention in financing the resolution procedure (for example facilitating a transfer strategy) is unlikely to meet the least-cost test, according to which the cost of resolution for the DGS should not be greater than the cost incurred in case of liquidation. This limitation may be particularly problematic for medium-size banks, which are unlikely to meet the requirement to access the Single Resolution Fund (“SRF”) – which requires the bail-in of at least 8% of total outstanding liabilities - without a haircut on uncovered deposits.⁶⁶ In other words, this class of banks may not have any funding tool available to timely transfer the deposit base of the failing banks – including uncovered deposits – in the context of resolution.

To address this challenge, the European Commission has recently tabled a legislative proposal – the so-called Crisis Management and Deposit Insurance (“CMDI”) review. The proposal increases the options and tools available to supervisory and resolution authorities for the management of a banking crisis and provides a pragmatic and efficient solution for the problem of mid-sized banks. The proposal would, *inter alia*, establish a general depositor preference rule to replace the current super priority of covered deposits, allowing national DGSs to act as financing bridge, after MREL resources have been depleted, to allow medium-sized banks earmarked for resolution to reach the minimum bail-in requirement (8%) to access the SRF, where needed. The CMDI review would facilitate the transfer of uncovered deposits in resolution, similarly to the FDIC approach, thus contributing to the stability of the deposit base and the franchise value of the bank. The estimations published by the SRB⁶⁷ show that the impact on industry funds would be limited, because MREL would be the first line of defence for the banks earmarked for resolution, and because of the relatively small size of the banks in question. Any compromise the co-legislators will find on the core elements of the proposal, for example around the creditor hierarchy and the depositor preference, has to take into consideration that sufficient funding has to be unlocked for resolution and alternative measures.

However, the approval of the CMDI in a version which would keep the spirit of the Commission’s proposal would still fall short of completing the BU, and the EU crisis management framework would still differ from the US model, where there is just one single deposit guarantee fund with fully mutualised resources. Indeed, the capacity of the DGS to act as financing bridge would depend by the financial power of each national DGS, therefore it could alter the level playing field among depositors of different EU countries. For this reason, it is crucial to establish the third pillar of the banking union, a European deposit insurance scheme (EDIS). It would allow better risk-sharing, promote further banking market integration, and further enhance the credibility of resolution. In April 2024, the European Parliament’s ECON Committee adopted a position on the Commission’s EDIS proposal, a so-called hybrid model, as it envisages mandatory support among DGSs only for liquidity purposes. This hybrid model could be followed at a later stage by the introduction of loss-sharing provisions.⁶⁸

⁶⁶ Small- and medium-sized banks mostly meet MREL with own fund instruments, as they don’t tend to issue large amounts of senior unsecured or subordinated debt. They therefore lack a layer of debt to be bailed-in before uncovered depositors to reach the 8% rule required to access the SRF. See Restoy (2018).

4. Optionality and flexibility in the use of resolution tools.

4.1 Bail-in and transfer strategies: an overview in light of recent resolution cases.

In Europe, resolution planning for large banks has mainly focused on the Open-Bank Bail-In (“OBBI”) approach.⁶⁹ OBBI is the preferred resolution strategy for the majority of SRB banks in the Banking Union (82%), but also for the largest banks in the United Kingdom (“UK”) and Switzerland.⁷⁰ OBBI was preferred because it offered the greatest degree of autonomy: contrary to transfer tools, the bail-in can be implemented without the need for a third-party (a willing buyer of the failed entity or, eventually, a bridge bank). Until now, however, the bail-in tool has played a limited role in recent European banking crises. In the Banking Union, in 2017, Banco Popular was resolved by selling it to Santander, following the write down and conversion of capital instruments.⁷¹ In 2022, when Sberbank faced a confidence crisis triggered by geopolitical sanctions, the main operating company in Austria was wound up, while the subsidiaries in Croatia and Slovenia were put into resolution and sold to local competitors.⁷² Outside of the Banking Union, Swiss authorities favoured a sale of Credit Suisse to UBS outside a formal resolution procedure, after the write down of Additional Tier 1 Instruments (AT1) and a severe dilution of shareholders. In the UK, the local subsidiary of SVB, whose resolution strategy was originally liquidation under national insolvency procedure, was instead turned into resolution and transferred to HSBC.⁷³ In all these cases, the sale of business tool was preferred to the bail-in tool. The write down and conversion of capital instruments was applied to support the transfer of the failing entity, rather than to recapitalise and return the bank to the market on a stand-alone basis as expected under the OBBI only approach.⁷⁴

In light of the recent crisis cases, the FSB report on the 2023 bank failures recommended to use optionality and flexibility in the choice of resolution tools.⁷⁵ In practice, the FSB report recommends resolution authorities to put more emphasis on the operationalisation of transfer tools, either alone or in combination with the bail-in, in

⁶⁷ Biraschi et al. (2023).

⁶⁸ According to the ECB Opinion on CMDI (2023), the EU legal framework should also introduce a US-style “systemic risk exception”, as recommended by the IMF in 2018 on the occasion of the Euro-area FSAP. The exception would allow EU authorities to waive the conditions to use the SRF in emergency cases in which financial stability may be at risk.

⁶⁹ We can distinguish two different approaches to the bail-in tool: the “open-bank” and the “closed-bank” bail-in. The economic effect of the two approaches is the same, namely loss absorption and bank recapitalisation using internal resources (equity and debt), while the implementation approach varies. In an open bank bail-in, the failed bank is recapitalised and returned to the market through the direct write down and conversion of equity and debt instruments. In a closed-bank bail in, the majority of assets and some of the liabilities of the firm in resolution are transferred to a successor entity (for example a bridge institution), while shareholders’ equity and TLAC liabilities are left behind in the failed entity to absorb losses. In this case, shareholders and creditors are not formally written down and/or converted, but they are simply left behind in the old entity (with the expectation of recovering whatever is the value of the assets left behind in liquidation). The open approach is common in Europe and UK, while the closed approach is used by the FDIC in US. See FSB (2023).

⁷⁰ See FINMA (2023b), Bank of England (2022), SRB (2022). In Switzerland, FINMA’s strategy for both Credit Suisse and UBS was the OBBI. In the UK, all eight largest firms are earmarked for bail-in (six under an SPE strategy and two under a Multiple Point of Entry (MPE) strategy).

⁷¹ See SRB (2020). In particular, all Common Equity Tier 1 and Additional Tier 1 instruments were written down, while the Tier 2 instruments were converted into new shares, which were transferred to Banco Santander for the price of EUR 1.

⁷² SRB (2023b).

⁷³ BoE (2023a).

⁷⁴ Other resolution cases in Europe seem to confirm this trend. For instance, in 2021, the Polish resolution authority used a combination of bridge bank and bail-in to resolve a regional cooperative bank (podkarpacki bank spółdzielczy). Danish Authorities used the same formula to address the crisis of two cooperative banks (københavns andelskasse in 2018 and Andelskassen J.A.K. Slagelse in 2015). Finally, in Croatia, a local bank (Jaadranska banka d.d. Sibenik) was resolved through a combination of sale of business, bail-in, and the asset separation tool. See Benahmed and Houarner (2023).

⁷⁵ FSB (2023).

case OBBI cannot be credibly implemented at the point of resolution. But while flexibility and optionality are good guiding principles, their implementation requires a certain level of preparation. Resolution planning requires intense efforts, while the resources of both resolution authorities and the banking sector are scarce. There are therefore limits to the capacity of resolution authorities to prepare in advance for multiple tools, or the extent to which they can be combined together. For example, the FSB clarifies that enhanced flexibility should not come at the expense of the operationalization of the preferred resolution strategy. The question that we try to address is therefore to what extent flexibility and optionality can be embedded in resolution planning without putting efficiency at risk. This question will be tackled having regard to the architecture of the EU resolution framework. In the following paragraphs, we first outline two examples of resolution approaches – in the US and Denmark (Paragraph 4.2) – based on a certain degree of flexibility in the choice of bail-in and transfer tools. Second, we provide some preliminary reflections on flexibility and optionality in the context of the Banking Union (Paragraph 4.3).

4.2 Flexibility in the use of transfer and bail-in tools: the examples of United States (FDIC) and Denmark (DFSA/FSC)

a) The FDIC approach to resolution: bail-in in combination with sale of business or bridge bank

The FDIC is responsible for the resolution of all Insured Depository Institutions (IDIs) under the Federal Deposit Insurance Act (FDI Act), as well as the resolution of financial holding companies under the Dodd-Frank Act (DFA).⁷⁶ Although the two resolution procedures are backed by different frameworks and different sources of funding, the approach undertaken by the FDIC to bank failures is broadly similar.

Since the GFC, the FDIC approach has been predominantly based on transfer strategies, on the assumption that the best resolution outcome is to sell the assets of the failing bank to the private sector as soon as possible, either during resolution or shortly afterwards.⁷⁷ This strategy was shaped by the lessons learnt from the 1980-1994 crisis in the US, and further reinforced by the successful use of Purchase & Assumption (“P&A”) transactions during the GFC.⁷⁸ Liabilities and assets of the failed entity are transferred to a third party or a bridge bank, which can be sold at a later stage via a deferred P&A transaction.⁷⁹

The P&A transaction can be facilitated by loss-sharing arrangements financed by the Deposit Insurance Fund (DIF).⁸⁰ While the FDIC is constrained by the least-cost-test, which may lead to a haircut to unsecured depositors, the latter can be waived under the systemic risk exception, in case it is needed to address a serious risk to U.S. financial stability.⁸¹ For example, the exception can be used to avoid losses to uncovered depositors, as it occurred for the resolution of SVB and Signature Bank. The cost of the P&A for the DIF is reduced by the economic bail-in of uninsured and subordinated liabilities (such as TLAC debt) and shareholders’ equity, which are not transferred, but left behind in the old entity (the receivership), turning them into claimants against the receivership estate.⁸²

⁷⁶ The Dodd-Frank established a special resolution framework for financial holding companies, which is activated only in case it is necessary from a financial stability viewpoint via a “three-keys process” requiring the explicit recommendation of two regulatory authorities and the final approval by the Secretary of the Treasury (in consultation with the President). Without the approval, such companies have to be liquidated under bankruptcy proceedings.

⁷⁷ FDIC (2017), Shibut and De Verges (2021). The FDIC’s preference for P&A transactions can be explained by the following reasons: i) to avoid asset overhangs and increase price transparency; ii) to reduce receivership expenses; iii) to shield the FDIC from political pressure deriving from managing large pools of assets; iv) to save FDIC’s cash.

⁷⁸ FDIC (2017). Between 2008 and 2013, the FDIC closed 489 banks holding \$686 billion in assets, with a resolution cost for the DIF of approximately \$72.5 bn.

⁷⁹ Section 210(b)(4), (d)(4), and (h)(5)(E) of the DFA. When deciding which liabilities to transfer, the FDIC must treat similar creditors equitably, albeit with limited exceptions.

⁸⁰ See FDIC (2017). During the GFC (2008-2013), the FDIC used loss-sharing agreements to facilitate 304 of 489 bank transfers.

⁸¹ See footnote 54.

⁸² For a description of the closed-bank bail-in, see footnote 69.

Although the FDIC has applied transfer tools to relatively large banks, P&A transactions remain untested in relation to G-SIBs.⁸³ According to Title II of the Dodd-Frank Act (DFA), when launching a resolution of a US G-SIB using a Single Point Of Entry Strategy (SPOE), the parent holding company is placed into receivership and its subsidiaries, assets and certain liabilities are transferred to a Bridge Financial Company. Most liabilities, especially those due to shareholders and unsecured creditors, would be left behind in the receivership and absorb the costs of the resolution. The FDIC could also use the Orderly Liquidation Fund (OLF) to provide a backstop source of liquidity to the Bridge Financial Company, where needed. The shareholders and creditors of the receivership would be allowed to exchange their claims on the receivership for securities of the new BHC, in accordance with the statutory creditor hierarchy (security for claims exchange). Consistent with the statutory obligations and the Title II creditor hierarchy, all losses would be borne by the private sector. The FDIC would oversee also the repayment of any OLF support, the termination of the Bridge Financial Company and the closing of the receivership⁸⁴. This outcome is very similar to the OBBI approach, as the failing G-SIB is *de facto* not transferred to a competitor, but rather returned to the market following the bail-in (albeit under a new legal entity).

From this cursory summary we can see that the FDIC adopts a “toolbox” approach, whereby multiple tools are operationalised in advance and potentially used in combination. Transfer strategies (P&A transactions and Bridge Financial Company) are in principle preferred to ensure business continuity and deliver market-friendly solutions. The bail-in tool facilitates the transfer of the failing bank, as shareholders and long-term creditors are excluded from the transfer and left behind in the receivership (so called closed-bank bail-in).

b) The Danish approach to the resolution of small- and medium-sized banks: partial bail-in in combination with bridge bank

In Denmark, Danish resolution authorities, the Danish Financial Supervisory Authority (DFSA) and the Financial Stability Company (FSC)⁸⁵, have earmarked all banks, including medium- and small-sized entities, for resolution (rather than piece-meal liquidation) to ensure the efficiency and continuity of payments during a crisis situation, as the Danish payment system is largely based on electronic deposits.⁸⁶ They have also developed a special wind-up scheme for small- and medium-sized banks with a balance sheet below the equivalent of EUR 3bn, which was used for the first time in 2011 to resolve Amagerbanken.⁸⁷

Following the DFSA declaration of failing or likely to fail, shareholders and creditors are written down via the bail-in tool only to the extent necessary to absorb the losses faced by the failing entity, but without providing new equity (recapitalisation amount). While covered depositors are fully protected, uncovered depositors are potentially exposed to losses, as they are not expected to be discretionarily excluded from the bail-in.⁸⁸ The bank (which, following the bail-in, has a clean balance sheet but no capital) is thereafter recapitalised by a bridge bank – a holding company managed by the FSC – using the resources of the Danish Resolution Fund. The use of the holding company allows the bank to continue its operations, without the need to transfer assets and liabilities to another entity.

The intervention of the Fund to recapitalise the bank has been approved by the

⁸³ FDIC (2017). The four largest FDIC resolution cases are the following: Washington Mutual, SVB, Signature Bank, and First Republic. Washington Mutual failed in September 2008 and, with \$307bn of assets, was at the time the sixth-largest FDIC-insured institution and the largest banking failure in FDIC history. During the 2023 banking turmoil, the FDIC closed SVB (\$212bn of assets), Signature Bank (\$110,4 bn), and First Republic (\$232bn). P&A transactions were used in all cases.

⁸⁴ For more information of a resolution under the DFA, see FDIC (2024).

⁸⁵ The DFSA constitutes both the supervisor and resolution authority, being also responsible for MREL determination and the removal of substantial impediments to resolvability. The FSC drafts resolution plans (approved by the DFSA) and applies resolution tools when a bank enters resolution.

⁸⁶ See European Commission (2023b). At end-2022, the Danish banking sector was composed of 65 credit institutions, 46 of which were small and medium size entities.

⁸⁷ Andersen et al. (2016). The wind-up scheme predates the adoption of the Banking Recovery and Resolution Directive (“BRRD”).

Concerning unsecured depositors, see the DFSA: “Senior Unsecured creditors and deposits above the limits for the DGS are exposed in this model. With an orderly wind-down under the control of Finansiel Stabilitet, a substantial bail-in of senior unsecured creditors and deposits above the DGS has to be expected.”

European Commission (DG COMP) under the EU state-aid framework.⁸⁹ Furthermore, the Danish resolution fund can recapitalise the bank even if the contribution to losses of shareholders and creditors have not reached 8% of the Total Liabilities including Own Funds (“TLOF”), as required in principle by Art. 44(5) BRRD.⁹⁰ The so-called 8% rule applies only when the resolution fund is expected to suffer losses, while under the scheme, the Danish fund would reasonably recover all expenses through the sale of the entity or, in the absence of a private purchaser, the liquidation proceeds.⁹¹

The Danish wind-up scheme ensures continuity of functions (including access to deposits) through the recapitalisation of the bank via a holding company (bridge bank), while the partial bail-in minimises costs for the Danish Resolution Fund and reduce moral hazard.⁹² The potential bail-in of uncovered depositors – in case needed to withstand losses – may in principle lead to contagion, although the Danish authorities are fairly confident that unsecured depositors are aware of the risk of losses. Finally, there is a risk that a purchaser for the failing bank may not be found, leading to an expensive piecemeal liquidation. This occurred, for example, with the sale of Andelskassen in 2016, when an interested bidder failed to obtain the approval of the supervisory authority. Andelskassen was eventually liquidated, while depositors were required to move their deposits to another institution before the closure.⁹³

4.3 Optionality and flexibility of resolution tools in the context of the Banking Union: initial reflections

Following the FSB report, policy-makers in the Banking Union have also highlighted the importance of flexibility. The SRB is working to achieve “flexibility in the choice of which resolution tool to use, depending on the situation, working on back-up options”.⁹⁴ Similarly, ECB Banking Supervision has stressed the importance of optionality in resolution, intended as the capacity “to choose the most appropriate tool for the situation at hand amongst a range of tools and be able to effectively make use of that tool”.⁹⁵

It is worth discussing the principles of optionality and flexibility from the following perspectives: a) legal feasibility under the EU legal framework, namely the BRRD and the Single Resolution Mechanism Regulation (“SRMR”), and b) the choice between bail-in and transfer tools.

a) Legal feasibility under the EU legal framework (BRRD/SRMR)

The EU legal framework encourages optionality and flexibility in the choice of resolution tools, albeit with some important caveats.⁹⁶ Resolution plans should foresee different crisis scenarios and follow different timelines.⁹⁷ For example, plans need to consider “relevant scenarios according to which the failure of the entity is idiosyncratic or occurs at a time of broader financial instability”, or the circumstances in which “the bail-in tool could no longer be feasible if losses exceed the eligible liabilities issued by the parent

⁸⁹ European Commission (2023b). The intervention of the fund was authorised on the basis of Art. 107(3)(b) TFEU on the following elements: i) the scheme was implemented several times successfully; ii) it would ensure the least possible adverse effect on financial stability; and iii) it would allow the orderly exit from the market of small banks. Each approval lasts for six months, but it is renewed on a rolling basis.

⁹⁰ Art. 44(5)(a) BRRD. The same rule applies for the use of the SRF (Art. 27(7)(a) SRMR). Art. 101(1)(d) BRRD allows the use of the resolution fund in resolution for the purpose of making contributions to a bridge bank. Art. 101(2) specifies that the principles governing the fund’s intervention in resolution under Art. 44 BRRD (including the 8% rule) needs to be complied when the resolution fund is expected to incur losses. *A contrario*, the 8% rule is not applicable when the resolution authority can demonstrate that the fund is not expected to bear losses following its intervention. See also Art. 78(1)(d) and (3) SRMR.

⁹¹ In addition, the write-down of creditors beyond losses is not needed, as the bail-in aims only at addressing losses, without recapitalisation. Hence creditors are not expected to be converted into shareholders and provide a new ownership to the bank, as it occurs under the OBBI.

⁹² The application of the bail-in under the Danish wind-up scheme is also facilitated by the imposition of MREL to all banks, including small entities with a balance sheet below 3 bn.

⁹³ See Andersen (2016). The Resolution Fund was nevertheless able to recover losses through the liquidation proceeds.

⁹⁴ Laboueix (2023). See also SRB (2023a).

⁹⁵ Tuominen (2023). It is noted that Tuominen, when speaking about optionality, also includes the capacity to timely use funding tools such as the precautionary recapitalisation tool (Art. 32(4) BRRD – Art.18(4)(d) SRMR) and the use of DGS funds in resolution (Art. 109 BRRD – Art.79 SRMR), when the relevant statutory conditions are met. As we address the issue of funding and liquidity in resolution in Section 5, the present Section focuses only on optionality in the use of resolution tools.

⁹⁶ The content of resolution plans is governed by the SRMR/BRRD framework, as well as by the Commission Delegated Regulation (EU) 2016/1075 of 23 March 2016, which provides regulatory technical standards specifying, *inter alia*, the content of resolution plans.

⁹⁷ Art. 8(9)(j) SRMR and Art. 10(7)(j) BRRD.

entity”.⁹⁸ This scenario-analysis exercise is expected to identify a Preferred Resolution Strategy (PRS) – the default strategy – but also one or more Variant Resolution Strategies (VRS), to address situations in which the preferred resolution strategy could not be successfully implemented.⁹⁹ Each strategy needs to specify the resolution tools that would be applied, either alone or in any combination.¹⁰⁰ Resolution authorities are thus expected to plan for multiple crisis scenarios and retain flexibility in their resolution approach, either by preparing fall-back options (variant resolution strategies) or combining different tools together (within the same resolution strategy). In addition, resolution authorities can always deviate from the resolution plan at the time of resolution, applying different tools than the ones identified during the planning phase.¹⁰¹ The legal framework also sets out certain limitations to the flexibility that can be embedded in resolution planning, to ensure that optionality does not come at the expense of the operationalisation of the PRS. First, the choice of strategies and tools must be primarily driven by their capacity to achieve the resolution objectives under Art. 14 SRMR and Art. 31 BRRD; for example, a strategy cannot be included in the plan if it is not expected to preserve critical functions and financial stability.¹⁰² Second, resolution plans need to be credible and feasible, meaning that resolution authorities should assess whether a potential strategy can be realistically operationalised in a very short time frame, including during the resolution weekend.¹⁰³

b) The choice between bail-in and transfer tools

The cases of Banco Popular and Credit Suisse (although the latter was executed outside resolution) showed that transfer strategies can be effective in addressing a liquidity crisis driven by a loss of confidence. At least initially, Banco Popular and Credit Suisse were balance-sheet solvent, complying with applicable capital requirements and displaying limited need for bail-in recapitalisation.¹⁰⁴ The challenge was how to stop the run of depositors and investors. In both cases, the merger with a more reputable competitor eliminated the loss of franchise, restoring market confidence and preventing financial instability.

The sale of business tool, especially via a share deal, offers a swift solution to a banking crisis. From an operational viewpoint, the transfer can be executed without complying with any procedural requirement under company or securities law, other than the marketing procedure established under Art. 39 BRRD. This simplified procedure alleviates the execution risks to which the resolution authority may be exposed in case of bail-in.¹⁰⁵ It also constitutes a market-friendly solution, because the purchaser, rather than the resolution authority, will be responsible for the restructuring and re-organisation phase.

However, the sale of business also entails its own set of challenges. Most importantly, it requires a willing buyer, as the resolution authority cannot impose the purchase of a failing bank to a competitor.¹⁰⁶ Unfortunately, it is not possible to know in advance whether a buyer will be available; on the contrary, this possibility becomes increasingly difficult as the size of the bank grows.¹⁰⁷ The transfer can also have negative effects on

⁹⁸ Art.10(3) SRMR, Art. 8(6) BRRD and Recital 22 of DR 2016/1075.

⁹⁹ The legislative framework establishes a clear prevalence of PRS over VRSs. For example, the MREL target is calibrated exclusively on the basis of the PRS (Art. 12d SRMR). Resolution authorities can remove impediments to resolvability affecting the implementation of the VRS only if this is not detrimental to the PRS (Art. 25(5) of DR 2016/1075).

¹⁰⁰ Art.22(4) SRMR, Art. 37(4) BRRD.

¹⁰¹ Art. 23 (third subparagraph) SRMR, Art. 87(j) and 91(6)(b) BRRD. In resolution, the SRB should follow the resolution plan, unless the circumstances of the case show that the resolution objectives are more effectively achieved by taking actions not foreseen in the plan.

¹⁰² The resolution objectives under Art. 14 SRMR and Art. 31 BRRD must all be pursued as extensively as possible, both in resolution planning and execution. They are the following: (a) to ensure the continuity of critical functions; (b) to avoid significant adverse effects on financial stability, in particular by preventing contagion, including to market infrastructures, and by maintaining market discipline; (c) to protect public funds by minimising reliance on extraordinary public financial support; (d) to protect depositors covered by Directive 2014/49/EU and investors covered by Directive 97/9/EC; (e) to protect client funds and client assets.

¹⁰³ Art.10(3) and (4) SRMR, Art. 15(1) and 16(1) BRRD.

¹⁰⁴ For the case of Credit Suisse, See Baudino *et al.* (2023): “As of end-2022, Credit Suisse reported total shareholder equity of CHF 45.3 billion, a CET1 ratio of 14.1%, a Tier 1 leverage ratio of 7.7% and outstanding AT1 bonds amounting to CHF 16 billion.”

¹⁰⁵ Art. 38-39 BRRD. The marketing procedure under Art. 39 BRRD can in any case be waived partially or completely by the resolution authority in case it would undermine financial stability or one or more resolution objectives.

¹⁰⁶ Art. 38(1) BRRD, which specifies that the transfer can take place without obtaining the consent of the shareholders of the institution under resolution or any third party *other than the purchaser*.

¹⁰⁷ FSB (2023b). Looking at the list of Global Systemically Important Banks (G-SIBs), it is clear that a failing G-SIB would have a limited subset of potential purchasers. For jurisdictions hosting only one G-SIB, the only possible transfer would be to a G-SIB located abroad.

competition: mergers in resolution involving a larger player buying another big local competitor may exacerbate the Too Big to Fail (“TBTF”) challenge. For example, the merger of Credit Suisse with UBS increased the TBTF problem in Switzerland, and a similar solution would not be available should the new entity fail, as UBS has now become the only remaining G-SIB established in Switzerland. Competition concerns could be partially alleviated by cross-border mergers with banks located abroad, although there can be regulatory and political frictions.

For all these reasons, transfer strategies are not superior to OBBI, as their choice provides for different trade-offs. In the case of larger banks, for which a potential buyer with the necessary economic capacity and business interest may not be found, OBBI is likely to be the most widespread tool as PRS. On the one hand, OBBI can be executed even in the absence of a prospective buyer, providing the highest degree of certainty to resolution authorities concerning their capacity to apply the PRS to a systemically important institution. On the other hand, the fact that the failing bank returns to the market post-resolution preserves competition and avoids excessive market concentration. A transfer strategy – either sale of business or bridge bank tool – can be envisaged as VRS, in case the bail-in cannot be successfully implemented. Conversely, smaller banks have a larger pool of potential purchasers, and their transfer during resolution constitutes a more credible option. They are therefore more suited to have transfer strategies as PRS, with OBBI acting as a “plan b” (VRS).

Finally, bail-in and transfer strategies are not only alternative solutions, but they can also be combined together to achieve important synergies. We can imagine two scenarios: one in which transfer tools are used to facilitate OBBI, and another in which the bail-in supports a transfer deal. In the first scenario, the sale of assets and liabilities to either a competitor, an AMV, or a bridge bank is expected to help the entity in resolution to regain the confidence of the market following the OBBI. For example, we can imagine the transfer of a number of subsidiaries abroad to allow the bank to focus on its core business at home, and/or the disposal of impaired assets via an AMV to clean up its balance sheet. In the second scenario, the bail-in of capital and debt instruments can be used to absorb losses and lower the outstanding liabilities that need to be transferred, reducing the cost of the transfer for the resolution authority.¹⁰⁸ The transfer of a failing bank occurs in an imperfect market, where the list of potential purchasers can be limited by the size and geographical location of the bank, the marketing timeline is extremely compressed and the valuation of assets and liabilities is uncertain. Past cases in both US and Europe show that healthy banks are often willing to rescue their failing competitors only in exchange for deflated prices, sterilisations from any increase in capital requirements, or loss-sharing agreements.¹⁰⁹ The bail-in of a bank’s liabilities can therefore minimise the cost of such “facilitations”, which would otherwise need to be paid by the resolution fund.

¹⁰⁸ See Baudino *et al.* (2023), “For instance, a bail-in of subordinated debt can help lower the outstanding liabilities in a transfer, thus reducing the amount of funding required to complete the transfer and increasing options for resolution”.

5. Liquidity in resolution

5.1 Liquidity assistance in crisis scenario: an overview in light of the 2023 banking turmoil

The topic of “liquidity in resolution” is a complex one. When a bank approaches FOLTF and is resolved, it is likely that it has exhausted any source of liquidity or of eligible collateral for central bank ordinary refinancing operations. The focus is therefore on any form of private collateral, which can be quickly mobilised, and on temporary public funding mechanisms (resolution funds by the resolution authorities and/or central bank and government funding). Here, there is a trade-off between ensuring an orderly and effective resolution process and avoiding moral hazard and any form of taxpayer financing.¹¹⁰

In this paragraph, having in mind the events of March 2023, we will make some policy considerations on the features of an effective liquidity framework in resolution. This would also give the opportunity to draw some implications for the design of an effective public sector liquidity backstop in the European Union. These considerations revolve around the following elements:

1) Timing of liquidity provision (before; during and after resolution): An effective resolution action should aim at (i) re-establishing solvency by creation of an adequate capital layer and (ii) enabling the entity to maintain access to liquidity (or to have sufficient collateral to obtain it) in order to refinance its liabilities as they fall due. Yet, while the re-establishment of an adequate level of capital would emerge out of a resolution proceeding, liquidity needs may still afflict the resolved entity since market volatility, as well as lack of information, and/or confidence may both restrain new parties from extending credit and prompt old creditors to run.¹¹¹ The problem is also further complicated by the fact that the resolved entity does not automatically regain access to monetary policy operations.¹¹² Such a liquidity demand immediately after resolution has to be met, in order to avoid another bank crisis. Besides, the problem is further complicated by the fact that liquidity needs may already arise in the run-up to resolution.¹¹³

2) Sources of funding: Here, the conceptual divide is between private and public sources (the latter usually referred to as “public sector liquidity backstop”).¹¹⁴ As regards the private sources of liquidity, they could be bank internal resources and privately-led banks consortium collectively agreeing to lend to, or deposit money in the ailing bank, anticipating that it could be less costly for the industry to extend funds to such bank than to sustain the collective cost of its default.¹¹⁵

At the other end of the spectrum, and bearing more relevance for the purpose of this paper, given the amounts at stake in case of crises of large and global banks¹¹⁶, lies the temporary public sector backstop. Despite the concept being rather loose, a useful

¹⁰⁹ Recent research shows that the purchasers of failed banks tend to accrue substantial accounting gains: They were 2.9% (on average) for 10 acquisitions in Europe post-BRRD; 2.6% for the purchase of Signature Bank, Silicon Valley Bank, and First Republic Bank in 2023, and 5% for the purchase of Credit Suisse. See Bertay and Huizinga (2023), and Böni *et al.* (2023).

¹¹⁰ In this respect see, among others, Tucker (2014); IMF (2016) and FSB (2016). Of course, when liquidity needs are met by recourse to public sources, the first condition that should address any moral hazard concerns is the necessary temporary nature of the funding support.

¹¹¹ The potential difficulty of the market to effectively assess the renewed solvency position of a recapitalized firm after resolution, and, thus, reliably extend credit to it, is remarked by many authors, see Brescia Morra *et al.* (2022), Demertzis *et al.* (2018), AFME (2018), FSB (2018) and IMF (2016).

¹¹² Depending on the resolution tool used and on whether the legal entity emerging from resolution is different from the original one, the process for accessing monetary policy operations might take some time.

¹¹³ For the need to differentiate at least three different moments in time (pre-; in-; and immediately outside resolution) when analysing funding gaps, provisioning, and sourcing of liquidity, see the approach taken by the SRB in its 2021 operational guidance for Liquidity and Funding in Resolution – particularly, Paragraph 41. In the literature, see Brescia Morra *et al.* (2022) and Demertzis *et al.* (2018).

¹¹⁴ Drawing on the taxonomy adopted by the FSB in its 2016 “Guiding principles on the temporary funding needed to support the orderly resolution of a G-SIB”, the term “public sector liquidity backstop” covers the relevant public sector authority(s) and/or mechanism(s) in charge with providing temporary liquidity to a bank in resolution, including resolution funds, deposit insurance funds, resolution authorities, central banks and/or finance minister.

¹¹⁵ Under this umbrella could fall the March 2023 move by 11 US banks to deposit \$30bn in First Republic Bank, in an effort to curb the panic, but to no avail. First Republic eventually failed and was acquired, via a P&A deal, by JP Morgan. See Wall Street Journal (2023).

In any case, in the case of banking groups contingency plan shall fully address and operationalise internal liquidity transfers and collateral mobility. See SRB (2021).

¹¹⁶ In a 2022 study, an SRB Working Paper estimated the liquidity needs of a G-SIB in resolution as amounting to Euro 178bn. A similar conclusion – i.e., liquidity needs of Euro 184bn – was reached in a 2020 ECB analysis. For the SRB analysis, see Infelise *et al.* (2022). For the ECB one, see Amamou *et al.* (2020).

distinction to draw is between a mechanism pre-funded by the private sectors (e.g., resolution funds or deposit insurance funds) and a temporary public funding backstop (in particular, the public budget and/or the central bank, the latter via Emergency Liquidity Assistance (“ELA”).¹¹⁷ The distinction lies in the lending capacity of the liquidity provider, as the former, unlike the latter, usually provides for a pre-determined lending support. The lending capacity of the liquidity provider critically impacts on the credibility and effectiveness of the backstop.

Against this backdrop, there are at least two different – but intertwined – topics raised when it comes to the role played by liquidity providers, namely: (a) the timing of their intervention and (b) in case of different funding sources, the sequences in which they can be drawn on and, more in general, their interplay (e.g., some sources may play a role not as direct liquidity provider, but rather by issuing guarantees to the bank).

So ahead of resolution, firms’ funding needs are usually satisfied either by market sources (most likely conditional on the acquisition of secured position on the firm’s assets), or by central bank lending facilities, provided that eligibility and conditionality requirements for accessing such facilities are met.¹¹⁸ Given that central banks’ lending is usually made available at interest rates higher than ordinary market rates, at this stage market sources may be preferred.

In resolution, while in order to reduce moral hazard behavior it is commonly acknowledged that market sources of funding should have priority, realistically private markets may not be available or willing to extend funds to the entity.¹¹⁹ Thus, at this stage, while resolution funds are the natural source of funding, it is not unconceivable that other parties could participate and have a role too, either by providing additional liquidity support (typically, the central bank) or ad-hoc guarantees for accessing such support (typically, the fiscal authority). Particularly for the case of the Banking Union, interactions among different authorities could play a critical role in ensuring the credibility of the liquidity commitment of the temporary public funding mechanism – credibility which ultimately hinges also on the size of such a commitment.

Immediately outside resolution, and despite having reached balance-sheet solvency and the required capitalisation, the resolved entity could still have to deal with different form of market failures barring it from accessing private markets. So, until and in order to restore market confidence in the resolved and recapitalised bank, access to public sector backstops may be essential. Here, the considerations just presented still hold: access to central bank liquidity facilities may be a solution, conditional on meeting central bank’s requirements for accessing such sources – but an entity coming out of a resolution procedure may still not be in a position to provide eligible collateral.¹²⁰

3) Conditions: the third element to consider pertains to the terms and strings attached to the liquidity commitment – particularly when such commitment comes from a public sector backstop. Namely:

- (a) **The size of the liquidity commitment:** the alternative here is between, on the one hand, mechanisms capped by the size of the resources already available to the provider (typically this is the case of pre-funded mechanisms), and, on the other, mechanisms where the maximum funding’s line capacity an institution could draw down is not known *ex-ante*.¹²¹
- (b) **Collateral policy and solvency requirement:** both these elements aim at ensuring a full repayment of the amount lent either by granting the creditor and liquidity provider a secured position via adequate collateral (and with conservative haircuts) or by limiting the provision of the funding to balance-sheet solvent entity.¹²² A firm facing a restructuring process via resolution may lack, also immediately out of the process, adequate collateral against which securing the liquidity support. And of course, this could also very well be the case in the run-up to resolution – especially

¹¹⁷ There are exceptions to this classification. This is the case of the European Stability Mechanism Common backstop (see next Paragraph 5.2) which, despite belonging to the second category (i.e., a public funding backstop based on the fiscal capacity of the Member States), provides pre-determined, and thus limited, lending support.

¹¹⁸ These requirements usually revolve around proper collateralisation of the liquidity support extended and adequate solvency status of the receiver.

¹¹⁹ See FSB (2016) and FSB (2018). This hierarchical approach is also the stance taken by many jurisdictions, and see for a comparative analysis Grund et al. (2020).

¹²⁰ Also, in this scenario additional obstacles may come from rating agencies difficulties in assessing the credit standing of the resolved entity, ultimately impacting on liquidity available as well.

¹²¹ This is the case for instance of the UK regime, whereby liquidity in resolution is to be provided “*in the necessary scale*”, see BoE (2023b).

¹²² For an overview of major issues and considerations revolving around collateral as well as solvency policy see IMF (2016) and Tucker (2014).

Also, it has been argued that limiting Lender-of-Last-Resort financing to only solvent firms may be beneficial in the sense that it could reduce the stigma effect apparently associated in accessing such funding source – see Tucker (2014).

if the lack of adequate collateral prevented the bank from raising the liquidity needed from the market in the first place. On the other hand, particularly where the funding lines provided come either from the central bank or the public budget and no *ex-post* recoupment mechanism from the industry is foreseen, it is all the more important to have in place mechanisms capable of avoiding *de facto* bail-outs.

- (c) **Guarantee/indemnity provisioning:** In addition to collateral policy and solvency requirements, and in order to strengthen the repayment expectation of the creditor, third-parties may provide an explicit guarantee to the liquidity support. This would imply that in case of non-repayment of the loan, such third-party would act as a loss bearer – and potentially as an ultimate risk-taker, if losses are not recouped *ex-post* from the industry.
- (d) **Recoupment mechanism:** As per FSB Key Attribute 6.3 “*jurisdictions should have in place [...] a funding mechanism with ex post recovery from the industry of the costs of providing temporary financing to facilitate the resolution of the firm*”. The existence of recoupment mechanism from the industry acquires particular relevance in the event of non-repayment of the funds extended by the relevant funding arrangement, as it should rule out any bail-out scenario from arising. It should thus apply both in case of backstops to pre-positioned industry funds (like the European Stability Mechanism (“ESM”) backstop to the SRF in the Banking Union) and temporary public backstops for liquidity purposes beyond pre-positioned funds.
- (e) **Rates:** In certain jurisdictions the extension of funds in a crisis is normally provided at higher rates than those prevailing in the market before the crisis.¹²³
- (f) **Duration:** As the extension of liquidity is temporary by design (i.e., the funding mechanism amounting in all respect to a loan), the need of the financing arrangement to provide for a reimbursement schedule is essential.¹²⁴ In this regard, the various frameworks may be characterized by a different degree of flexibility.¹²⁵ In any case, the need to provide some kind of confidence to private markets remains paramount.
- (g) **Transparency:** Transparency can improve understanding of backstop measures. However, transparency may also prove to be more challenging, as the announcement or the revelation that a bank is receiving central bank liquidity support may generate, or exacerbate, uncertainty about its condition, ultimately undermining market and depositor confidence.¹²⁶ Striking a good balance between transparency and flexibility could help addressing the stigma traditionally associated with central bank liquidity provision.¹²⁷

Having in mind the above-mentioned taxonomy, we can now analyse the features of the public sector liquidity backstops over the 2023 turmoil. Starting from the US episode, it appeared that a combination of two different mechanisms for meeting institutions’ funding needs have been deployed: (i) a backstopping mechanism, via FDIC guarantees, for institutions placed in receivership procedure or for FDIC-directed bridge institutions and (ii) the Federal Reserve (“FED”) lending programmes and facilities, which were enriched with a dedicated funding programme.¹²⁸

¹²³ Penalty interest rates are applied in the Eurosystem, for the purpose of ELA provisioning by National Central Banks. See Article 7 of the 2020 Agreement on Emergency Liquidity Assistance.

Grossman and Rockoff (2015) and Laeven and Bindseil (2017) observe that (i) the term “penalty” rate used for referring to such higher rates was in fact never originally used by Bagehot and (ii) historically, higher rates accompanying liquidity provisioning in a crisis have not always been considered a necessary element in the history of lender of last resort function. For an analysis of different approaches to the pricing of Lender of Last Resort funding, see IMF (2016).

Finally, in the UK liquidity in resolution framework, rates are “*designed to incentivise return to market-based funding*” – which of course could also point towards higher rates as a mean to incentivise the firm to return to a form of market-based financing.

¹²⁴ On the difficulty to determine what is meant by “temporary”, that is on the different elements that could affect the effective duration of the support, see IMF (2016).

¹²⁵ For instance, the provision of ELA in the Eurosystem may only exceed 12 months following a non-objection

by the Governing Council requested by the Governor of the NCB concerned, see ECB (2020). Under the UK framework, “*the Bank’s objective is to provide liquidity [...] for a sufficient period of time to allow the firm to make the transition to market-based funding*” – BoE (2023b).

¹²⁶ Real-time transparency may be more effective to reassure markets and the public during a market-wide shock, rather than an idiosyncratic crisis, by signalling that the central bank is providing assistance and that the firms remain fundamentally solvent.

¹²⁷ On the role that stigma apparently plays on the functioning of the FED discount windows, see Ennis and Price (2020). Some proposals for reducing the stigma associated with the central bank lending facility are suggested by Solé (2024).

¹²⁸ For a brief overview on the design and structures of the FED discount windows facilities (i.e., primary; secondary and seasonal credit) and also for the legal, operational and cultural issues that have contributed over-time to underuse these facilities, see, among others, McLaughlin (2023).

As per the former mechanism, as it has been reported¹²⁹, the FDIC provided for repayment guarantees in order to support loans extended by the FED, under its discount window, to the two bridge depository institutions of Signature Bank and SVB – such institutions also posted collateral against the loans received. Equally, an outstanding discount window loan extended to First Republic Bank before it entered into receivership – and fully secured by pledged collateral – had its repayment fully covered by an FDIC guarantee, once the bank was placed into receivership.¹³⁰

With regards to the second funding mechanism – i.e., the FED lending programmes –, what is relevant to underline here is that on March 12 the FED, in the wake of SVB's demise, and in order to prevent the contagion from spreading, made available for all depository institutions the Bank Term Funding Programme, an additional funding programme on top of its primary credit discount window. The lending facility, whose design and objectives were deeply tailored to the challenges emerged during the banking turmoil, differs in several respect from the FED main discount window lending program.¹³¹ Namely, in terms of: (i) eligible collateral, that is limited to collateral accepted by the FED in open market operations – e.g., US Treasuries and agency debt¹³²; (ii) collateral valuation, anchored to the par value (i.e., the outstanding face amount of the collateral) of the pledged collateral¹³³; (iii) haircuts policy, not envisaging the application of any haircut to the pledged securities¹³⁴; (iv) term, whereby advances extended under the Bank Term Funding Program may have a maturity of up to one year¹³⁵ and (v) rate, which are meant to be fixed – i.e., one-year overnight index swap rate plus 10 basis points.¹³⁶ Besides, and conditioned on the prior approval of the Treasury, funds of up to \$ 25bn may be made available as a credit protection to the Program to Reserve Banks from the Treasury¹³⁷.

Bank Term Funding Program loans have been extended to First Republic Bank before it entered receivership¹³⁸ and, more in general, most recent aggregate data released by the FED shows that there has been a high demand for borrowing under such program.¹³⁹

In the Credit Suisse case, an overall amount of liquidity assistance totalling CHF 250bn has been provided by the Swiss National Bank.¹⁴⁰ This has been provided in three different tranches, each presenting different features:

- (a) As the Credit Suisse liquidity position was rapidly deteriorating, the Swiss National Bank made available on 15 March, under its standard ELA framework, a first tranche amounting to CHF 50bn.¹⁴¹ Conditions for accessing the Central Bank facilities mirror ordinary ELA requirements, among which proper collateralisation was needed for successfully drawing on the funds.¹⁴² And in this respect, as reported by the Report of the Expert Group on Credit Suisse demise (p. 49), “*Credit Suisse's preparations for posting collateral to obtain enough emergency liquidity assistance were inadequate, especially at the level of the parent*”. Namely, not only sufficient collateral of adequate quality was lacking at the level of the parent – so

¹²⁹ See <https://www.federalreserve.gov/monetarypolicy/additional-information-on-other-credit-extensions1.htm>.

¹³⁰ See note above.

¹³¹ Under the “Purpose and design” section of the FED's F.A.Q. on the program it is clarified that the Program is established “to make available additional funding to eligible depository institutions in order to help assure banks have the ability to meet the needs of all their depositors. The Program will be an additional source of liquidity against high-quality securities, eliminating an institution's need to quickly sell those securities in times of stress”.

¹³² For obligations eligible as collateral for advances in open market operations, see <https://www.ecfr.gov/current/title-12/section-201.108>.

By contrast, under primary credit discount window, in addition to collateral accepted under open market operations, a wider range of securities and loans are accepted. For collateral eligibility under the FED discount window, see <https://www.frbdiscountwindow.org/Pages/General-Information/The-Discount-Window#eligibility>

¹³³ By contrast, under the discount window lending program collateral is valued at its fair market value.

¹³⁴ Institutions accessing the primary credit discount window and posting the same collateral accepted under the Bank Term Funding Program would also see no haircut being applied. Otherwise, collateral eligible for the discount window but not eligible for the Bank Term Funding Program would be subject to customary haircuts and collateral valuation – and in this respect see https://www.frbdiscountwindow.org/Pages/Collateral/collateral_valuation.

¹³⁵ By contrast, advances under the discount window may be extended for a term of up to 90 days.

¹³⁶ By contrast, advances extended under the discount window are subject to variable rate.

¹³⁷ According to the last FED Periodic Report on the Bank Term Funding Program (March 12, 2024), the Department of the Treasury is currently providing \$ 25bn as a credit protection to Reserve Banks. See <https://www.federalreserve.gov/financial-stability/bank-term-funding-program.htm>

¹³⁸ See FED (2023b).

¹³⁹ See footnote 139, data are included in the latest FED Periodic report on the Program.

¹⁴⁰ See Report of the Expert Group on Banking Stability (2023).

¹⁴¹ For a review of the main characteristics of the Swiss framework, see Report of the Expert Group on Banking Stability (2023). More recently, for a summary of the events concerning Credit Suisse, see SNB (2024a).

¹⁴² Under its ELA framework, the SNB can provide emergency liquidity assistance to domestic banks only if (i) they are no longer able to refinance their operations on the market; (ii) the bank or banking group seeking credit is of importance for the stability of the financial system; (iii) the bank is solvent and (iv) the funds extended are fully covered by sufficient and eligible collateral at all times. See SNB (2023b).

that Central Bank's financial assistance could only be provided at the level of the Swiss subsidiary, where enough collateral was available. But also liquidity upstream from the subsidiary towards the parent, and more generally, distribution and transfers across the Group, was not possible if the activation of the subsidiary's emergency plan were to be avoided.

- (b) A second CHF 100bn tranche, aimed at by-passing the obstacles sub a), was made available on 19 March, immediately after announcement of UBS takeovers of Credit Suisse.¹⁴³ The support was provided to both banks – and particularly, to the Credit Suisse parent entity.¹⁴⁴ The provision of this form of liquidity assistance (called “ELA+”) has required tailor-made emergency legislation to enter into force.¹⁴⁵ ELA+ presented some peculiar characteristics, namely it was provided without any collateral being posted by Credit Suisse; without any backstop guarantee provided by the fiscal authority while it granted the Swiss National Bank a preferential claim in the bankruptcy of Credit Suisse.¹⁴⁶ All in all, as it has been highlighted, the Swiss National Bank “*had no control over the use of the liquidity provided [as] Credit Suisse was not in resolution and the existing management was still in post*”.¹⁴⁷ Despite this, the financial risk of non-repayment borne by the Swiss National Bank was limited, given Credit Suisse's acquisition by UBS.¹⁴⁸
- (c) A third CHF 100bn tranche, always made available on the basis of the above-mentioned emergency legislation, was granted to Credit Suisse and it was backed by a Federal Default Guarantee.

The key elements of this Public Liquidity Backstop were already set out in a 2022 draft Federal Council Bill¹⁴⁹ whereby the backstop: (i) is to be provided as an ultima ratio, only after Swiss National Bank ELA; (ii) is limited to systemically relevant banks; (iii) is extended jointly or right before the commencement of a resolution proceeding, so that the bank will fall under the control of the relevant resolution authority and (iv) does not require a concurrent posting of collateral, the federal government enjoying only a preferential status in the potential insolvency liquidation of the bank.¹⁵⁰

5.2 The Banking Union framework: addressing liquidity needs in resolution

The architecture of Banking Union temporary public funding mechanisms has been analysed several times over the past years.¹⁵¹ Drawing on the elements analysed in the previous paragraph:

- i) In the run-up to and ahead of a formal resolution declaration, and without considering private sources of funding, a firm's liquidity needs may be met either via Eurosystem Monetary Policy Operations or ELA – provided the relevant conditions for tapping such liquidity sources are satisfied. Particularly for the case of ELA, which is extended at National Central Bank's risk and at its discretion up to a certain amount¹⁵², these include: (a) provision of collateral – coupled with haircuts – and/or guarantees¹⁵³; (b) individual and consolidated solvency requirement¹⁵⁴; (c) maximum duration, which in theory should not exceed 12 months¹⁵⁵; (d) the imposition of a penalty interest rate¹⁵⁶ and (e) a

¹⁴³ See Report of the Expert Group on Banking Stability (2023).

¹⁴⁴ See https://www.snb.ch/en/publications/communication/press-releases/2023/pre_20230319_1.

¹⁴⁵ See the 16 March Ordinance on Additional Liquidity Assistance Loans and the Granting of Federal Default Guarantees for Liquidity Assistance Loans from the Swiss National Bank to Systemically Important Banks, available here <https://www.fedlex.admin.ch/eli/oc/2023/135/fr>.

¹⁴⁶ Report of the Expert Group on Banking Stability (2023).

¹⁴⁷ Report of the Expert Group on Banking Stability (2023).

¹⁴⁸ On August 11, UBS announced full repayment of ELA+. See <https://www.ubs.com/global/en/media/display-page-ndp/en-20230811-adhoc.html>.

¹⁴⁹ Report of the Expert Group on Banking Stability (2023).

¹⁵⁰ On August 11, UBS announced the repayment of the loans under the Public Liquidity Backstop and voluntarily decided to terminate it. See <https://www.ubs.com/global/en/media/display-page-ndp/en-20230811-adhoc.html>.

¹⁵¹ See de Groen (2018); Grund et al. (2020); Fernandez de Lis and Garcia (2018); Demertzis et al. (2018); Mersch (2018) and Deslandes and Magnus (2019).

¹⁵² Under Article 3.3 of the 2020 Agreement on Emergency Liquidity Assistance “*where the size of ELA operations envisaged by one or more NCBs for a given financial institution or a given group of financial institutions exceeds a threshold of €2 billion, on the basis of all the information available, the Executive Board shall decide in a timely manner whether the issue needs to be addressed by the Governing Council*”.

¹⁵³ Article 3.2 of the Agreement.

¹⁵⁴ Articles 4 and 5.4 of the Agreement.

¹⁵⁵ Article 6 of the Agreement.

¹⁵⁶ Article 7 of the Agreement.

specific prohibited scenario of ELA provisioning (namely when its extension would amount to a replacement of fiscal policy, so-called, “monetary financing”).¹⁵⁷ Coherently, and as recognised by the SRMR, “*the need for emergency liquidity assistance from a central bank should not, per se, be a condition that sufficiently demonstrates that an entity is, or is likely in the near future to be, unable to pay its liabilities as they fall due*”.¹⁵⁸

- ii) For resolution situations, the SRMR has established the SRF, an ex-ante industry financed mechanism which, among others, may be used for liquidity support and to the extent necessary to ensure an effective application of resolution tools.¹⁵⁹ Its capacity currently amounts to Euro 77.8bn, representing at least 1% of the covered deposits of all Banking Union credit institutions. Such resources may not all necessarily be deployed for meeting liquidity needs, given that the SRF can also be used for solvency purposes, under conditionality.¹⁶⁰ Such capacity will be coupled with a common backstop of Euro 68bn provided by the European Stability Mechanism (“ESM”), once the ESM reform will be ratified by all the Member States.¹⁶¹ Relevant elements of the concrete SRF liquidity support (e.g., size; duration; etc...) should be determined under the resolution scheme – and in this respect, these may include the posting of collateral.

In addition, nothing prohibits ELA provisioning also in and post resolution – Article 4 of the 2020 ELA Agreement seems to point in this direction, whereby an institution is considered solvent also when “there is a credible prospect of recapitalisation” – provided though that all conditions for accessing ELA are met.¹⁶²

Over time, some commentators have criticised the above framework. Criticisms have been directed both at the architecture and design of the public liquidity facilities and at their temporal interplay and coordination. Namely:

- a) As per central banks liquidity support, the main limitations of a pre- and in-resolution reliance on such source comes from the likely shortage of unencumbered assets of sufficient quality for either accessing the lending facility or simply renewing the existing ELA positions.¹⁶³ Also, as long as ELA is granted under the backing of a third-party guarantee commitment, should this come from a Member States budget, then it may fall under State aid legislation.¹⁶⁴ In any case, reliance on national backstop measures would not be in line with a truly European solution to the problem.¹⁶⁵ Ultimately, the risk of ELA provisions rests on the National Central Bank balance-sheet, i.e., losses incurred by the latter are in principle not recouped via any *ex-post* collection from the industry.¹⁶⁶

As per the liquidity support extended by the SRF, a recurrent criticism has revolved around its total capacity – which would amount, also taking into account the ESM common backstop, to roughly Euro 145 bn.¹⁶⁷ The capacity of the SRF to effectively withstand a crisis and provide sufficient funding in the midst of a crisis, in scenarios where any G-SIB is facing distress, have been

¹⁵⁷ Article 5 of the Agreement.

¹⁵⁸ Recital 57 SRMR.

¹⁵⁹ See Article 76(1) SRMR.

¹⁶⁰ See Articles 76(1) and 27(7)(a) SRMR.

¹⁶¹ The channelling of funds from the ESM to SRF is operationalised via a last resort credit line (meaning that it can be accessed only when all SRF resources have been exhausted and lacking other available funding sources to tap), extended by the former to the latter, and to be eventually repaid by SRF *ex-post* contributions collections from the banking industry. Thus, the transaction would be fiscally neutral for the ESM as it would be funded by the banking sector, which would be the ultimate risk bearer of any non-repayment of SRF financial assistance. For more details on the architecture of the ESM backstop, see ESM (2021).

At the moment of writing this paper, the revised ESM Treaty has been ratified by all Member States except one.

¹⁶² See Mersch (2018) and Deslandes and Magnus (2019).

¹⁶³ The two points are stressed, respectively, by de Groen (2018) Fernandez de Lis and Garcia (2018).

¹⁶⁴ See the 2013 European Commission “Banking Communication” and, in particular, paragraph 62 whereby Central Bank ELA may constitute State aid where it is backed by a counter-guarantee of the State. See also Recital 57 of the SRMR, whereby “if [ELA] were guaranteed by a State, an entity accessing such a facility would be subject to State aid rules. In order to preserve financial stability, in particular in the event of a systemic liquidity shortage, State guarantees of liquidity facilities provided by central banks or State guarantees of newly issued liabilities to remedy a serious disturbance in the economy of a Member State should not trigger the resolution framework provided that a number of conditions are met. In particular, the State guarantee measures should be approved under the State aid framework and should not be part of a larger aid package, and the use of the guarantee measures should be strictly limited in time”. Finally, see also IMF (2016).

¹⁶⁵ That is, the bank-sovereign nexus would not be severed, as institutions’ financial positions and recovery prospects would remain linked to the Member States of their incorporation. See Demertzis et al. (2018) and Grund et al. (2020).

¹⁶⁶ See Deslandes and Magnus (2019).

¹⁶⁷ See de Groen (2018); Deslandes and Magnus (2019); Fernandez de Lis and Garcia (2018); Mersch (2018); Demertzis et al. (2018) and Grund et al. (2020).

questioned in the past and on the basis of recent studies.¹⁶⁸ We have seen in the previous Paragraph that the management of Credit Suisse crisis required the Swiss Central Bank to commit and make available an overall amount of CHF 250bn (i.e., roughly Euro 264bn). Of course, this does not mean that the facility has to be fully used, as in fact the sole announcement of its existence may be enough to restore confidence in the market. Yet, for this to happen, either the maximum capacity of the facility does not have to be revealed *ex-ante* (this is apparently the case of the UK framework, whereby, some commentators have stressed, “*there are no official caps on the scale, the duration and the rates applied to this type of liquidity support*”¹⁶⁹) or should be large enough to address the potential liquidity needs of the most systemic institutions.

- c) As per the interplay between the above different lending mechanisms, concerns pertain mainly to the firm’s capacity to maintain access to a source of funding, whatever this may be, along the continuum of its financial positions – and, namely, as its position deteriorates. The point is particularly relevant if one considers that access to SRF financing is conditional on the formal opening of a resolution proceedings, which usually take place over the course of a week-end.¹⁷⁰ Funding drains are in fact less likely to happen in such a period, but nonetheless funding gaps may have to be filled in the run-up to resolution declaration, and thus a sort of bridge financing function should be in place to “accompany” firms to resolution. Of course, on the other hand, such bridge financing function is less likely to be provided by Eurosystem financing as resolution approaches, as adequate collateral to post at firm’s level is likely to get scarcer and scarcer. The risk of funding flows drying-up could thus get real.

An alternative, should such bridge financing function not be possible and resolution be declared in the middle of the week, would be to rely on a resolution authority’s moratorium power. This option has been recently used in the Banking Union, but it has to be always carefully assessed to avoid legal risks.¹⁷¹

All in all, the crucial problem in the Banking Union seems to pertain to the identification of the party or institution better suited to provide for a guarantee against ECB’s lending – yet, as shown below *sub (iii)*, some proposals in the literature have also touched on the role played by the ECB. In particular, answers should be given about who should provide for such a guarantee in the actual framework; whether this party should then be granted a form of active involvement in the resolution proceeding, given that it would take on a risk-bearer role in the process, and, more generally, and how such guarantee should be overall designed. In this regard, the following reforms have been proposed:

- 1) **SRB/SRF – or other EU bodies – guarantee**¹⁷²: Under this proposal, the ECB would extend funds to bank in resolution under its monetary policy operations framework against the issuance of a guarantee from the SRB/SRF¹⁷³. While such guarantees should provide for an authentic European solution to the problem of an effective European public backstop in resolution, it leaves unanswered two questions: (i) the size and amount of the guarantee would be a function of SRF maximum capacity, which, as said, represents itself the main limitation of the Fund. Considering that any commitment exceeding such capacity may only be offered to the extent that a form of *ex-post* recoupment mechanism from the industry is established and effectively drawn down¹⁷⁴, it remains to be

¹⁶⁸ Historically, between 2008 and 2010 the German Bank Hypo Real Estate has benefitted from State Emergency Guarantee amounting to roughly Euro 145bn and in 2008 Dexia has benefitted from a State guarantee provided by the Luxembourg, French and Belgian governments amounting to Euro 135bn. Of course, the main rebuttal to such historical observations is grounded on the fact that in the pre-GFC world, there was not in place a prudential framework like Basel III and the FSB Key Attributes which would have probably resulted, for the two cases at stake, in completely different outcomes. This point is stressed by de Groen (2018). For the Bank Hypo Real Estate case, see https://ec.europa.eu/competition/state_aid/cases/231241/231241_1279613_551_2.pdf. For the Dexia case, see https://ec.europa.eu/competition/state_aid/cases/245074/245074_1520672_505_2.pdf.

For the studies mentioned in the text, see previous footnote 116.

¹⁶⁹ Demertzis et al. (2018). See also Grund et al. (2020) and above footnote 121.

¹⁷⁰ The resolution of Banco Popular took place the night of Tuesday 6 June 2017.

¹⁷¹ Besides, pre-resolution and resolution moratoria might make it insufficient to curb liquidity outflows.

¹⁷² Namely, (i) for an SRB/SRF guarantee, see Deslandes and Magnus (2019); de Groen (2018); Demertzis et al. (2018) and Fernandez de Lis and Garcia (2018); (ii) for an ESM guarantee, see Deslandes and Magnus (2019) and Demertzis et al. (2018) and (iii) for a general EU budget guarantee, see Beck et al. (2022).

¹⁷³ The guarantee should be provided against a premium paid by the beneficiary bank – see de Groen (2018).

¹⁷⁴ The current framework (see SRMR Article 71) already envisaged the possibility to collect “extraordinary ex-post contributions” from institutions. These may be collected where the available financial means are not sufficient to cover the

seen whether a guarantee based not on the presence of actual resources, so available and payable “at first demand”, but on the power to collect them *ex-post* could be accepted.¹⁷⁵ (ii) It also remains to be seen if, to the extent that a form of credit valuation of the guarantor is mandated under the lending facility, an SRB/SRF guarantee could meet the required credit worthiness rating, given that SRB credit standing – and its deterioration – is likely to be correlated with the occurrence of banking shocks.

Alternatively, and in the absence of a Euro-area fiscal body or, more generally, an European-level guarantee framework, it has been proposed that such guarantee could be provided: (a) by the ESM – yet as pointed out, at this moment in time the reform of the ESM Treaty envisages a different role for the ESM in resolution, in the form of a common backstop to the SRF – or (b) by the EU budget, which “*would send a better signal of joint liability of EU Member States*”.¹⁷⁶

Particularly for the proposal *sub (b)*, one could assume a leading role of the European Commission in the process, based on joint borrowing via European Commission emission of Euro-bonds. Setting aside any political implications, this solution, if considered and enacted, would probably be the one better suited to address the issues raised in this paragraph.¹⁷⁷ Furthermore, such solution could be considered in conjunction with the broader SRB repayment capacity such that the SRB could effectively backstop the European guarantee with *ex-post* contributions, to be raised only in case of need.

- 2) **Issuance of SRB/SRF bonds as collateral for repos¹⁷⁸:** Under such a proposal, the SRB would “*issue and hold long term bonds, instead of selling them to investors*”.¹⁷⁹ The bonds would then be lent to the bank in resolution, which could in turn use these securities as collateral for obtaining liquidity – most likely via central bank refinancing operations, as private sources of funding would not be available at that point in time. Yet, problems could arise also under this proposal. Setting aside the operational needs to have the SRB becoming an “eligible issuer” for credit rating purposes, any credit ratings assigned to its bonds would eventually reflect, as seen above *sub 1*), the credit standing of the SRB, which is likely to be affected in a resolution scenario. If the valuation as well as eligibility of the collateral is conditioned on an issuer’s credit worthiness, then one can see how challenges may arise for the feasibility of this solution. Also, it should be analysed whether the ECB collateral policy should be amended in order to recognize eligibility of these types of SRB-issued securities, and their haircuts.
- 3) **Creation of a (new) Eurosystem Resolution Liquidity Facility¹⁸⁰:** Under such a proposal the ECB would be equipped with a specific monetary policy tool to be deployed in resolution scenarios.¹⁸¹ Among the different conditions to which the activation of the instrument should be subject, the (temporary) financial assistance is to be extended only against provisioning of a public backing, which could also amount, in the absence of adequate collateral to be posted, to an “Euro-area guarantee”. In fact, it is precisely such form of European backing, at the moment non-existent, that would make the difference within a framework where, otherwise, it is already possible to extend ELA in resolution – against adequate collateral or guarantee.¹⁸²

losses, costs or other expenses incurred by the use of the Fund in resolution actions. Such additional contributions may not exceed three times the annual amount of contributions.

¹⁷⁵ This point seems to be stressed by Mersch (2018), on the questionability of accepting a “blanket guarantee *ad personam*” as a replacement of collateral (i.e., guarantee *in rem*) for monetary policy operations. By contrast, Demertzis et al. (2018) are critical and “*consider an exaggerated demand if the ECB requires guarantees to be immediately liquid*”, also considering that “*also in normal monetary policy operations, the collateral held by the ECB is not necessarily more liquid*”.

¹⁷⁶ Beck et al. (2022).

¹⁷⁷ Among other things, a solution of the sort should also address and consider the asymmetry between the European Union – with 27 Member States – and the Banking Union – with 21 Member States.

¹⁷⁸ See Deslandes and Magnus (2019) and de Groen (2018). On this point also Fernandez de Lis and Garcia (2018).

¹⁷⁹ Deslandes and Magnus (2019).

¹⁸⁰ See Deslandes and Magnus (2019). On similar lines, proposing an ECB liquidity support in the form of a “Transitional Liquidity Assistance”, see de Groen (2018).

¹⁸¹ The creation of such a funding facility should be assessed, *inter alia*, under the lens of: (i) compatibility with ECB monetary policy mandate and Treaty prerogatives and (ii) relationships with SRB as well as ESM. It goes without saying that the creation of this facility would entail significant institutional changes and reforms.

¹⁸² In reality, given that provision of funding under this facility would be made by the ECB, and not by National Central Bank, as it is the case nowadays of ELA, one could wonder whether such a reform would also entail, as a side-effect, a centralisation of ELA upon the ECB. For a discussion on this point, see Deslandes and Magnus (2019) and Fernandez de

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