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Financing bank resolution: An alternative solution for arranging the liquidity required

Banking Union Scrutiny

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Abstract

Liquidity in resolution is one of the unresolved elements of the Single Resolution Mechanism. Currently, with the Single Resolution Fund (SRF) and the Eurosystem, there are two potential sources of liquidity in resolution, which both have clear limitations in use and amounts. Straightforward solutions to give the SRF and/or Eurosystem more firepower in resolution go against the main objectives of the resolution mechanism (i.e. breaking the sovereign-bank nexus and avoiding use of taxpayers' money). This paper proposes an ECB liquidity facility with an SRF-guarantee as an alternative solution for banks in resolution. The funds available should be broadly sufficient to address potential liquidity needs for resolution tools. The proposed solution primarily requires agreement on the ESM-backstop for the SRF, a firmer commitment for (possible) future contributions for the SRF as well as a change to the current emergency liquidity assistance or introduction of a new dedicated Transitional Liquidity Assistance by the Eurosystem.

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EXECUTIVE SUMMARY

The introduction of the Single Resolution Mechanism has shifted *de facto* the function of lender of last resort from central banks to the Single Resolution Fund (SRF). Indeed, when the bank in resolution cannot obtain liquidity from the central bank, the SRF is the last remaining option. This is unlikely to be a purely theoretical possibility witnessing the up to EUR 900 billion in guarantees that euro area governments provided to banks in the aftermath of the global financial crisis.

However, the limited funds available and time required to mobilise sufficient liquidity make the SRF unsuitable for taking this role. Even when the ESM backstop to the SRF – that still needs to be finally agreed by euro area countries – is taken into account, the total amount available would only reach around EUR 142.5 billion. This is likely to be grossly inadequate to offer liquidity support in a systemic crisis and potentially even if a large systemically important bank were to fail.

There are several solutions under consideration for addressing the liquidity needs of banks that have just been through resolution and need to regain market confidence. For example, providing a government guarantee to the Eurosystem, providing ESM claims as collateral for Eurosystem liquidity support, or increasing the size of the backstop beyond the levels currently foreseen. These solutions would involve taxpayers' money and intensify the sovereign-bank nexus, both of which are contrary to the primary objectives of the resolution mechanism. Moreover, the lengthy political discussions regarding the backstop serve to illustrate the resistance to potential mutualisation of losses.

As alternative, this paper proposes to introduce a Transitional Liquidity Assistance (TLA). This would provide ECB liquidity support for resolved banks based on an SRF-guarantee. This SRF-guarantee would be based on potential further commitments from banks to the fund. These commitments would be maximum 0.125% of covered deposits per year.. Such annual contributions are similar to the current contributions during the build-up of the fund and would only be required at the moment that the guarantees are called on. The TLA should only be provided under strict conditions to lower the risk of the funds being called on.

TLA returns the lender of last resort function to the ECB. The total amount available for the TLA depends very much on the Marginal Lending Rate (MLR) of the ECB, potential anticipated adjustment to compensate for reductions arising from future increases in the MLR and whether the SRF is used for other purposes than this guarantee (capital support, AMCs, etc.). Based on the current MLR (0.25%) the SRF guarantee could be up to EUR 3,150 billion, which should be more than enough to cover potential liquidity shortages in resolution.

In addition, there might also be a need for liquidity support for the use of the resolution tools. This is important in particular for non-bank resolution tools such as AMCs. The total amounts of liquidity support required for this tool are expected to be substantially lower than for banks in resolution, but might still involve the public backstop facility.

1. INTRODUCTION

Liquidity has been insufficiently addressed in the crisis management framework established in the aftermath of the global financial crisis. The Single Resolution Fund (SRF) has a target size of 1% of covered deposits or **about EUR 60 billion in 2023**, which, considering for example the large liquidity injections during the crisis, is only a fraction of potential needs for liquidity .

In a possible new systemic crisis of a similar magnitude, **liquidity needs are expected to be lower**. Firstly, capital requirements have been complemented with two liquidity ratios. The Liquidity Coverage Ratio (LCR) to ensure that the banks have sufficient liquid assets to cover short-term liquidity outflows (BCBS, 2013) and the Net Stable Funding Ratio (NSFR) to ensure that the available stable funding is larger than the required stable funding over a period of one year (BCBS, 2014). Second, introduction of the resolution mechanism should lead to earlier and more structured interventions, lowering the needs for liquidity compared to the ad hoc state interventions during the financial crisis. Liquidity and funding are also already considered in a dedicated section in resolution plans (SRB, 2016).

Failing banks are, nevertheless, still likely to experience **liquidity and funding problems due to the inherent maturity mismatch**, i.e. assets (e.g. mortgage loans) have longer average maturity than liabilities (e.g. customer deposits). This implies that banks are subject to a combination of market and funding risks. Banks are exposed to market risks when selling assets, which potentially leads to losses when the sales price is below the book value. Whilst they are exposed to funding risks when they need to finance additional assets or replace existing funding, which is either not available at all or only at a high cost (De Haan & Van den End, 2013).

Difficulties in obtaining funding and liquidity shortages are often the consequence of **uncertainty about the capital position**. Strengthening the capital position should therefore in most cases be sufficient to also address liquidity shortages. However, in periods of severe stress there is more uncertainty about the value of assets and viability of bank business models, leading to unnecessary hesitation in providing funding to banks.

When there is a purely temporary liquidity problem, this is traditionally solved with **liquidity support from central banks** as lenders of last resort. This might not be sufficient for banks in resolution, which are not always eligible for the liquidity facilities of central banks. In this case, the resolution funds might be the only remaining alternative. However, the resolution funds are not equipped to provide potentially large amounts of liquidity support, having limited funds that are not necessarily readily available.

The Eurogroup (2018), König (2018), IMF (2018) and others are very aware that the current crisis management framework **addresses liquidity insufficiently**. Although policy makers at Eurozone level have agreed to work on a framework for liquidity in resolution, there is still no agreement on concrete measures (Eurogroup, 2018).

This paper aims to propose a solution for **addressing liquidity needs for banks in resolution**. This means that sufficient liquidity should be available to the Single Resolution Board (SRB) for resolved bank as well as for the use of the resolution tools. The main challenge in this context is to provide a feasible solution that respects the objectives of the resolution mechanism. Indeed, it should contribute to safeguarding financial stability, while avoiding intensification of the bank-sovereign nexus or that tax payers' money is used for resolving banks.

The remainder of this paper first discusses the available liquidity facilities and limitations of these facilities in section 2. In response, section 3 contains a proposal for a Transitional Liquidity Assistance facility of the Eurosystem for banks in resolution. Moreover, it also assesses the effectiveness of the proposed solution as well as its feasibility. Section 4 assesses whether the remainder of the funds available to the SRF would be sufficient for the financing of the non-bank resolution tools. The fifth and final section draws the main conclusions and discusses the changes that would be required in the current crisis management framework for the proposed solutions to work.

2. CURRENT LIMITATIONS TO LIQUIDITY IN RESOLUTION[1]

Liquidity is important for the resolved bank as well as for the use of some resolution tools. This section discusses the limitations of the existing facilities – Eurosystem and SRF – that can provide liquidity to banks in resolution and for resolution tools that cannot obtain sufficient funding from private sources.

2.1 Eurosystem

The ECB and national central banks jointly forming the Eurosystem traditionally act as lender of last resort for solvent banks in the Euro area. They provide liquidity to banks under the monetary policy framework and emergency liquidity assistance (ELA).

The main objective of the **monetary policy framework** is to ensure price stability, which the Eurosystem traditionally steers via the monetary policy rate. This rate is primarily imposed on the banking system via the main refinancing operations (MROs), which transmit the policy rate to the real economy. All solvent banks in the Euro area with sufficient unencumbered eligible assets can bid once a week for the MROs, which provide short term liquidity. If required, a solvent bank with sufficient unencumbered eligible assets can obtain immediate liquidity under the marginal lending facility (MLF), for which the Eurosystem charges a higher interest rate. The extra charge used to be 100bps, but since 2009 this has gradually declined to just 25bps in 2014. In times of severe stress, the Eurosystem is likely to take additional measures to ensure the transmission of monetary policy.[2]

In turn, **ELA** is immediately available, which allows the Eurosystem to fulfil its role as lender of last resort. The national central banks can provide ELA to solvent banks with temporary liquidity problems and no or insufficient unencumbered eligible assets to obtain the required liquidity under the normal monetary measures. Under ELA, national central banks (NCBs) have more flexibility in, for example, collateral requirements than under the normal monetary measures. This is also reflected in the cost for banks, which is at least 100bps higher than the MLF rate. In this context a bank is considered solvent if it meets the minimum capital requirements or has a credible prospect of a recapitalisation to meet the capital requirements within 24 weeks.[3] The national banks that provide ELA must inform the ECB about all their ELA operations. Crudely put, the higher the amount the more stringent the information

[1] This section is based on Willem Pieter de Groen (2018).

[2] Looking at the past global financial and Eurozone debt crises, the Eurosystem increased the number of open tenders with unlimited allotted amounts. Moreover, it launched the longer-term refinancing operations (LTROs) and targeted longer-term refinancing operations (TLTROs), which, with one to four years, offered a substantially longer maturity than standard MROs. The Eurosystem also launched an asset purchases programme (APP) under which the Eurosystem bought large amounts of assets. These non-standard measures allow solvent banks to fulfil their liquidity/funding needs as well as reduce the need for liquidity by offloading assets. As these funds are often not immediately available to banks they do not provide an ideal solution for banks in resolution.

[3] There have been rules and procedures in place for ELA since 1999, and they have been revised several times since. Over the years, the ELA procedure has become gradually more transparent and specific. The meaning of solvency was only specified in the latest revision of the ELA rules and procedures published by the ECB in June 2017.

requirements. If the ELA exceeds EUR 2 billion, the Governing Council can object to the support when it interferes with the tasks and objectives of the Eurosystem.

Under the current arrangement the SRB cannot always count on liquidity support from the ECB and NCBs. On several occasions, the ECB has already stressed that the provisioning of liquidity **should not be considered automatic**. However, when the resolved bank meets the conditions for liquidity it can obtain it from the central bank (Mersch, 2018). This is also reflected in the resolution plans that contain a description of the eligible unencumbered assets for these regular central bank facilities, but the use of ELA is ruled out in resolution plans (SRB, 2016).[4]

There are currently several limitations in the use of central bank liquidity in resolution:

1. **Central banks are independent** and can thus not be ordered by the SRB to provide liquidity for resolution. This means that currently the SRB can only count on central bank liquidity in its resolution plans to a limited extent.
2. Central bank liquidity is **only available for banks**, which means that it cannot be used for non-bank resolution tools such as asset management companies (AMCs).
3. Central banks **cannot finance insolvent banks**. This should not significantly affect the liquidity in resolution as banks should automatically become solvent after the intervention of the resolution authority.
4. When a bank is declared failing or likely to fail it is in principle also insolvent, which means that **monetary operations are frozen**. In order to regain access, the competent authority will have to declare the bank solvent again. This might prove challenging during resolution, when all required documents may not have been prepared.
5. When a bank with a **new license** is created in the resolution, in principle it also has to comply with the liquidity requirements, which would be an obstacle for the creation of a bridge bank with a new banking license.
6. Central banks only provide liquidity when they are **sufficiently protected** against the risk (i.e. by means of "adequate collateral"). The resolved banks therefore need to have sufficient unencumbered assets to pledge as collateral. As well as needing to possess the collateral, the resolved banks must also be able to present the information immediately and mobilise the assets. This is currently not always the case.
7. ELA is a responsibility of **national central banks**, which may distort the level playing field and predictability between banks across countries as well as within certain countries (differences in collateral requirements, haircuts, etc.). Moreover, with national central banks involved, the organisation of the ELA via national central banks also complicates the exchange of information between the ECB and SRB.

2.2 Single Resolution Fund

When the Eurosystem does not provide a solution for liquidity, there is still the solution of the SRF, but that also has some clear limitations. The SRF was created to provide the funds required in resolution, which are obtained from shareholders and creditors. The main purpose of the SRF is to provide funds for recapitalisation (König, 2018), but it can also be **used for liquidity** as well as to compensate shareholders and creditors that are worse off than in liquidation.[5] Focusing on liquidity support, the

[4] Article 10(3), 173 of 12.6.2014 (https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32014L0059).

[5] Article 76, 225 of 15.7.2014 (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0806&from=EN).

SRF can provide guarantees on the assets or liabilities and loans to banks in resolution and resolution tools (AMCs and bridge banks). Moreover, it can also purchase assets from the bank in resolution. Whereas recapitalisation is conditional on burden sharing[6], liquidity support is not linked to such requirements.

The main **limitation** of the fund is its size. The SRF is supposed to have a **size equal to 1% of covered deposits** of Euro area banks by end-2023. According to the most recent estimations of the SRB and JRC, it will reach about EUR 60 billion around that time. These funds will have to be obtained from the banks, which might be asked for an additional contribution of up to three times the *ex ante* contribution (approximately 0.125% of covered deposits) in case the *ex ante* funds are insufficient. This increases the potential size of the SRF to EUR 82.5 billion.

Alternative funds might complement the own resources of the SRF, which could potentially double the firepower of the fund[7] (De Groen & Gros, 2015; Zavvos and Kaltsouni, 2015). However, it is questionable whether third parties such as other non-euro area resolution funds and national deposit guarantee schemes are in fact inclined to contribute. Indeed, non-euro area resolution funds and national deposit guarantee schemes want to ensure that they have the funds available for their primary objective, either resolution of domestically active banks or compensating depositors. Only when a contribution to the resolution might lead to a lower loss for the national deposit guarantee scheme is there a clear incentive for the deposit schemes concerned to contribute.

A **backstop for the SRF** is currently being discussed by the Eurogroup. There seems to be consensus among euro area countries to create a common backstop in the form of a revolving credit line from the European Stability Mechanism (ESM) to the SRF (Löyttyniemi, 2018). The backstop would become part of a broader reform of the ESM and have a size equal to the target of the SRF of 1% of covered deposits (approximately EUR 60 billion). The use of the common backstop would have to be approved by the board of directors of the ESM (Eurogroup, 2018).

[6] The liquidity support is not subject to the bail-in requirement of 8% of total liabilities and own funds (TLOF) as well as the maximum contribution equal to 5% of TLOF.

[7] The alternative funds available are likely to drop substantially if the UK leaves the EU.

3. SOLUTION FOR RESOLVED BANKS

This section discusses liquidity needs for resolved banks, proposes a solution of how these needs could be addressed, as well as assessing whether the proposed solution would have sufficient means to be effective.

3.1 Liquidity needs

During the global financial and euro area debt crises, the **large majority of the EUR 2.5 trillion State aid consisted of liquidity support** (European Commission, 2017). In the case of a crisis of a similar magnitude, liquidity needs are likely to be substantially less thanks to the introduction of liquidity ratios (LCR and NSFR). However, in particular if a crisis were to persist, liquidity needs might still be substantial.

Liquidity shortages generally arise in the run-up to the resolution decision, but might worsen when the resolution scheme is implemented. Market analysts, creditors and shareholders are likely to need some time to assess the financial position of the resolved banks after the resolution decision is taken and the resolution action implemented. During this assessment period, investors might be hesitant to entrust funds to the resolved banks, creating a liquidity shortfall that needs to be addressed in resolution.

The SRB is expected to describe **liquidity needs in its resolution plans.** This is very challenging given the time-sensitivity of liquidity needs. Moreover, the SRB also needs to identify the collateral available, of which a large share might already be encumbered for liquidity purposes before the resolution. The collateral requirements are likely to increase substantially during periods of severe stress. During these periods the haircuts on eligible assets are likely to increase and fewer assets are likely to meet the eligibility criteria. The liquidity needs outlined in the resolution plans will take standard monetary measures into consideration, but not the liquidity that could potentially be obtained under the ELA.

The size of **liquidity needs is difficult to determine** in advance for the supervisors and resolution funds involved. There is currently very limited (public) information on the liquidity position of banks in resolution under the crisis management framework. These are strongly contingent on the moment of the intervention and the market conditions around that time, as well as on the resolution strategy and tools foreseen.

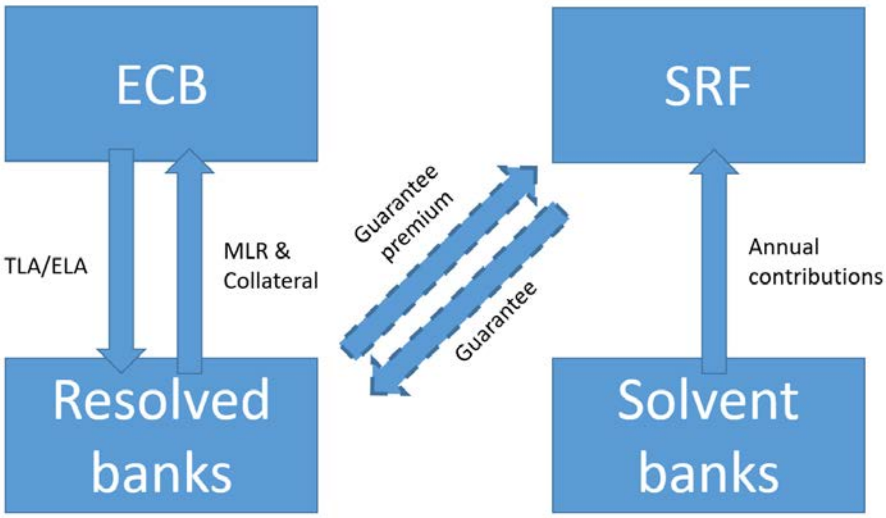
In the previous crises, liquidity support was substantial. In total, a maximum of almost EUR 900 billion in guarantees and EUR 70 billion in other liquidity measures was provided to banks in the euro area in the period between 2008 and 2016 (European Commission, 2017). In some extreme cases, **liquidity support reached or exceeded EUR 100 billion for a single bank** (e.g. Dexia in Belgium and Hypo Real Estate in Germany). Although these amounts do not reflect the legislative changes in the aftermath of the crises, they provide an indication of the possible magnitude of liquidity needs during a period of extreme stress in the financial and economic system.

Ideally, the crisis management framework should also be able to address liquidity needs in these extreme events. The **current SRF,** with, after the transition, a maximum of about EUR 60 billion immediately available, seems to be **clearly insufficient for these extreme conditions**.

3.2 Proposal for Transitional Liquidity Assistance

The crisis management framework has made the **SRF the *de facto* lender of last resort**. It has taken over the role of the central bank as the ultimate institution able to provide liquidity to resolved banks. However, the SRF does not have the same unlimited means to act as such. Some of the more straightforward solutions would be either to give a government guarantee to the Eurosystem, provide ESM claims as collateral to the Eurosystem or increase the size of the credit line from the ESM to the SRF to address liquidity needs during resolution. However, even though liquidity support would in principle not have to be costly, these solutions would also go against two of the main objectives of the resolution mechanism: i) minimise the costs of resolution for taxpayers and ii) break the 'doom loop' between banks and sovereigns. Moreover, these solutions do not appear politically feasible currently, given the resistance against potential mutualisation of losses, as indicated by the difficulty in agreeing on the SRF backstop (Löyttyniemi, 2018).

Figure 1: Liquidity for resolved banks



Note: **ECB**: European Central Bank; **ELA**: Emergency Liquidity Assistance; **MLR**: Marginal Lending Rate; **SRF**: Single Resolution Fund; **TLA**: Transitional Liquidity Assistance.

Source: Author's elaboration.

Alternatively, we propose to give the SRF the means to provide a **substantial guarantee to resolved banks**, which in turn could obtain the required liquidity immediately from the ECB (see Figure 1 for graphical presentation). The SRF would be able to give a credible guarantee so long as it has the possibility to raise additional *ex post* contributions from banks in the unlikely event that the guarantees are called.[8] In our proposal this would be an additional annual contribution that is equal to the current annual contribution (i.e. 0.125% of covered deposits). The liquidity could be provided under a new facility that we refer to as Transitional Liquidity Assistance (TLA) or a revised ELA. The bank receiving the liquidity support under the TLA (or revised ELA) should pay interest similar to the MLR to the ECB. In addition, the beneficiary banks should pay a premium for the guarantee. Based on the current ELA framework and the previous State aid decisions this should be at least 100bps.

The liquidity facility would have to be **provided by the ECB** instead of NCBs (currently responsible for ELA), and under pre-determined conditions, making the availability of the facility predictable for the SRB. The main conditions could be agreed between the ECB and the SRB/SRF in a Memorandum of Understanding (MoU). This should at least include the following **conditions** for the liquidity support:

[8] Since the guarantee is for liquidity and not capital support it should in principle not lead to any costs to the SRF. However, in order for the SRF to credibly grant a guarantee, there would be a need to raise the guaranteed amounts.

i) TLA is available to resolved banks with a guarantee from the SRF;
ii) Minimum total amount of liquidity that can be provided under TLA;
iii) TLA is only temporary to facilitate the transition from bank in resolution to viable bank;
iv) TLA can only be used when the other central bank facilities have been exhausted;
v) Use of TLA should be collateralised in order to reduce the likelihood that the guarantee is called;
vi) Use of TLA is accompanied by a plan outlining how the bank will become viable and the support exited, of which a summary will have to be published to regain the confidence of market participants. The exit should consider both other central bank facilities, market funding and the resolution scheme.

The TLA would, according to the latest Banking Communication of DG Competition,[9] be **subject to State aid rules**. Standard monetary policy facilities are excluded from State aid rules and the current ELA is also exempted under specific conditions. However, the TLA or revised ELA is not provided at the initiative of the central bank, is fully secured by collateral and is potentially part of a broader package, which are all requirements for being exempted from State aid rules. Ideally, in order to avoid the uncertainty concerned with *ex post* approval of liquidity support, which is by definition time-sensitive in resolution, DG Competition would include a special section for the TLA in a revised 2013 Banking Communication. This section could take the form of a standing guarantee scheme as was launched by several governments during the past crises. The main difference with the current provisions for guarantee schemes would be that the SRF would be allowed to create a scheme and provide guarantees for ECB liquidity instead of for privately-issued debt securities.

The above proposal would pass the function of **lender of last resort for banks in resolution back to the ECB**, while avoiding direct contributions from the taxpayer to the resolution of failing banks or the additional risk of contagion between the banks and the governments, primarily by shifting potential losses, however unlikely, on to the remaining banks. Moreover, providing a guarantee for ECB liquidity instead of, for instance, market participants has the advantage that the liquidity can be provided immediately and in a potentially larger amount. This is because the timing of the repayment is less important to the ECB than the actual repayment.

Although the facility has fewer moral hazard issues than most other solutions such as a credit line from governments, the guarantee from the SRF to the ECB might also have some **unintended consequences**. The guarantee might potentially reduce the urgency for the SRB to act, since they would know sufficient liquidity is available for resolution. The reduction of the firepower of the fund due to an increase in the guarantees might mitigate this potential unintended consequence. In addition, the ECB and NCBs might be less tempted to provide ELA when the alternative of TLA is available, with no or less credit risk. The lower compensation for the ECB and NCBs under the TLA than ELA should account for this. The resolved banks might also prefer using TLA, which requires no or less collateral. This should be overcome by means of requirements from the SRB, but if not sufficient, the liquidity might be granted super senior creditor status. This, however, might delay access to market funding for the resolved bank, but lowers the risk that the guarantees are called. The latter could happen at the moment that the losses are underestimated.

3.3 Potential size of the TLA

Size remains critical for the credibility of the liquidity facility. Using the last global financial and euro area debt crises as a benchmark, **about EUR 900 billion** would be sufficient in a severe financial crisis,

[9] OJ C 216 of 30.7.2013 (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:216:0001:0015:EN:PDF).

as shown in Table 1. As mentioned, the introduction of liquidity requirements and prompt interventions should lower the liquidity requirements in a financial crisis of a similar magnitude.

The costs of guarantees were only a fraction of the total amount guaranteed. Indeed, a total of around EUR 7.1 billion of guarantees was called in the euro area between 2007 and 2017. The average loss on the guarantees was about 0.21% per annum. This is substantially less than the approximately 0.86% per annum that the guarantors received for providing the guarantees. Providing the guarantee should indeed generate a profit for the SRF on average.

Table 1: Maximum guarantees granted during financial crisis (2007-17)

Indicator	Amount (EUR million)	Share (% per annum)
Maximum guarantees	**864,964**	..
Guarantee revenues (cumulative)	29,502	0.86%
Guarantee calls (cumulative)	-7,110	0.21%
Guarantee net revenues (cumulative)	**22,392**	**0.65%**

Source: Author's elaboration based on European Commission (2017) and Eurostat (2018).

Nevertheless, in order for the ECB to accept the guarantee as collateral, it must be **certain that the SRF can provide the funds if the guarantees are called**. This limits the guarantee to the potential cash flows of the SRF. The guarantee could be based on the target size of the SRF (*ex ante* plus *ex post*), the agreed ESM revolving credit line and the additional annual contributions as in our proposal. Our solution assumes that if the SRF cannot pay the entire guarantee at once it should at least be able to pay the interest. Indeed, the annual contribution should cover at least the interest payment to avoid the call growing above amounts that the SRF can recover. This means that based on the current MLR of 0.25%, for each euro of annual contribution more than EUR 400 can be guaranteed. However, the policy rates of the ECB change over time, which requires introducing a margin to cover interest payments if the ECB increases the MLR. The provisioning of additional collateral could substantially increase the liquidity available. In the example in the table below, it is assumed that the resolved banks can obtain a similar amount to the guarantee with unencumbered assets.

Overall, the proposed solution seems to be able to **mobilise more than sufficient funds** in order to guarantee substantial liquidity provisioning. Based on current policy rates, the SRF could potentially guarantee more than EUR 3,100 billion.[10] This is substantially more than the EUR 900 billion of guarantees provided during the crisis and EUR 500 billion available to the ESM. The policy rate could be up to 1.00% without assuming collateral and up to about 2.25% assuming that the bank can borrow a similar amount based on available unencumbered assets.

Table 2: Estimation of available funds for Transitional Liquidity Assistance (EUR million)

Marginal Lending Rate	SRF Guarantee	Bank collateral	TLA
0.00%	Unlimited	..	Unlimited
0.25% (current)	**3,142,500**	**3,142,500**	**6,285,000**

[10] Even if the SRF and the ESM revolving credit line were fully utilised, the SRF should be able to guarantee a substantial amount (approximately EUR 142.5 billion less than with these funds).

Marginal Lending Rate	SRF Guarantee	Bank collateral	TLA
0.50%	1,642,500	1,642,500	3,285,000
0.75%	1,142,500	1,142,500	2,285,000
1.00% (financial crisis)	**892,500**	892,500	1,785,000
1.25%	742,500	742,500	1,485,000
1.50%	642,500	642,500	1,285,000
1.75%	571,071	571,071	1,142,143
2.00%	517,500	517,500	1,035,000
2.25% (50% collateral)	475,833	475,833	**951,667**
2.50%	442,500	442,500	885,000
3.00%	392,500	392,500	785,000
4.00%	330,000	330,000	660,000
5.00%	292,500	292,500	585,000
6.00%	267,500	267,500	535,000

Note: The estimation of the amounts of the SRF guarantee are equal to the *ex ante* and *ex post* funding for the SRF (EUR 82.5 billion), ESM backstop (EUR 60 billion) and cash-flow from a potential annual contribution (EUR 7.5 billion) that should at least cover interest payments. The calculation is expressed by the following formula. $SRF\ Guarantee = \frac{Annual\ contribution\ SRF}{Marginal\ Lending\ Rate} + SRF + ESM\ backstop$.[11]

Source: Author's elaboration.

The amounts the SRF could potentially **guarantee are substantial, but highly dependent on the level of the MLR**. The MLR is currently at historically low levels and might increase in the future. Indeed, the MLR is likely to decrease in period of stress and increase in period of economic recovery and prosperity. For example, the Eurosystem decreased the MLR during the past crises from 5.25% in July 2008 to 0.25% in March 2016. This means that it is even more important for the resolved bank to bring down the amount of TLA swiftly. However, even at higher MLR levels the amounts available for TLA would still be substantial and well above the levels required in the past in cases of an individual bank failing under normal economic conditions.

[11] Example of the calculation of the maximum guarantee that the SRF could credibly provide based on a MLR of 1%: $SRF\ Guarantee_{MLR=1\%} = \frac{\text{EUR 7.5bn}}{1\%} + \text{EUR 82.5bn} + \text{EUR 60.0bn} = \text{EUR 892.5bn}$

4. SOLUTION FOR RESOLUTION TOOLS

The TLA above proposed only works for banks, as central banks do not provide liquidity to non-banks such as AMCs. This section discusses the liquidity required for the resolution tools, focusing on the non-bank resolution tools (i.e. AMCs and bridge banks). Moreover, it assesses whether the current size of the SRF including the ESM backstop would be sufficient for the SRB to execute an optimal resolution strategy.

4.1 Liquidity needs

The **resolution tools** form an important part of the crisis management framework. They can be used to lower losses and the need for recapitalisation as well as reduce the uncertainty about the financial position of the bank in resolution, thereby contributing to enhancing financial stability.

Looking at the resolution tools (see Table 3), the **sale of business tool and bail-in should in principle not require liquidity support** or liquidity from the central bank under the proposed TLA. In most cases the TLA should also be sufficient to address the liquidity needs for bridge institutions, unless it involves the creation of an entity without banking license. The latter might require separate liquidity support.

Asset separation or an AMC can be used to resolve bad assets. An **AMC** does not have a banking licence and **might require liquidity support** to avoid additional losses. In particular, during the crises, the transfer of assets to an AMC proved effective in reducing losses and contributed to financial stability. In almost all cases, national governments provided the liquidity support for these AMCs (Medina-Cas & Peresa, 2016).

Table 3: Expected effectiveness of resolution tools

Resolution tool	Sale of business	Bridge institution	Asset separation	Bail-in
Description	Bank assets are sold to other bank or investor	Selected assets and liabilities are transferred to new bank	Legacy assets are transferred to asset management company	Writing down or conversion of equity/debt
Type of institution	Bank	Bank	Non-bank	Bank
Access to central bank facilities	Potentially	Potentially	NO	N/A
Access to SRF	Potentially	Potentially	Potentially	N/A
Liquidity	Liquidity is in principle the responsibility of the acquirer	Liquidity can be arranged as for banking institutions	Liquidity can be arranged	Less liquidity required

Note: The table above is based on experiences in past state aid cases. The main assumptions for long-term viability are that the market value of the bad or legacy assets are and will remain below the economic and book value as well as that the transfer value in the case of an asset separation is taking place at the real economic value.

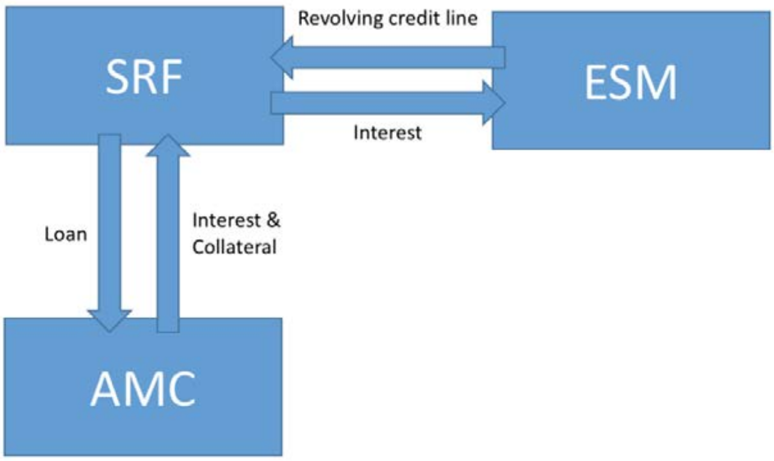
Source: Author's elaboration based on De Groen (2017 and 2018).

The SRB has the ability to **shift both assets and liabilities** of resolved banks to AMCs. However, this might not always be sufficient to arrange the funding of AMCs. In particular, the SRB is constrained by the 'no creditor worse off' condition, the fact that not all liabilities are suitable for transfer, such as deposits, and there might be a maturity mismatch between assets and liabilities. AMCs might therefore require liquidity support when created and potential additional funding when they mature.

4.2 Proposed ESM backstop facility

Increasing the funds available for resolution by adding a **public backstop for the SRF** should be sufficient to provide liquidity to AMCs when they are being created. The time available to amass liquidity for AMCs needs to be slightly longer than in the case of liquidity support for banks. It usually takes some time to set up AMCs as well as transfer assets and liabilities. The fact that the liquidity support is less immediate means that the SRF has also more time to arrange the liquidity. The SRF in combination with the revolving credit line from the ESM as currently discussed by the Eurogroup (2018) should in most situations be sufficient. However, it is also important in this case that the liquidity support is in principle only of a temporary nature and that the SRB can count on the funds when necessary.

Figure 2: Liquidity for non-bank resolution tools



Source: Author's elaboration.

4.3 Assessment of the amount of funds required

Using the last global financial and euro area debt crises as a benchmark again, **more than EUR 300 billion would be needed in a severe financial crisis to fund AMCs.**[12] The total *ex ante* (EUR 60bn) and *ex post* (EUR 22.5bn) contributions of the SRF and the ESM revolving credit line (EUR 60bn) would amount to EUR 142.5 billion. This would mean that more than half of the remaining funding (EUR 189bn) would have to come from transfers or other market funding, deleveraging and borrowing based on future commitments. Importantly, the funds used for AMCs reduce the SRF-funds available for the other objectives of the fund such as recapitalisation, compensation of 'no creditor worse off', etc.

[12] This amount is based on the maximum total assets of general government entities (EUR 232bn) and special purpose entities (EUR 98bn) in the period from 2007 to 2017 extracted from Eurostat (2018).

5. CONCLUSIONS

Liquidity in resolution remains one of the main outstanding issues in the crisis management framework. Traditionally, central banks have, as lender of last resort, the responsibility for assisting solvent banks in need of liquidity support, while in the context of the resolution mechanism the SRF can be used for a combination of capital and liquidity support. However, the means of the SRF are clearly insufficient to provide liquidity in the case of a severe financial or economic crisis or even in the case of the failure of a single very large bank. Moreover, in order for the SRB to use its resolution tools, it is important that access to sufficient liquidity is ensured.

In this paper it is proposed to give the **SRF the possibility to raise additional funds** in case a guarantee were called after the target level of the fund is reached in 2023. This potential cash-flow should in most cases be sufficient to provide a credible guarantee to the **resolved banks**, which can use the guarantee to obtain funding from the ECB. The latter would require the ELA to be revised and at least for systemic banks concentrated within the ECB or the setting up of a dedicated TLA. In addition, the SRB would have to agree the conditions with the ECB in a MoU and DG Competition would need to revise the 2013 Banking Communication.

Liquidity is also important for **non-bank resolution such as AMCs**. The size of the SRF is likely to increase with the public backstop. But the total funds available are still substantially less than the amounts that were used to fund AMCs during the crisis, which might require the SRB to attract other funding.

Overall, it is most important that liquidity support in resolution is **sufficient, readily available and that the availability is predictable**. This to allow the SRB to be able to execute the resolution strategy that best meets the objectives of the resolution mechanism.

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ANNEX: SUGGESTED QUESTIONS FOR THE HEARING

Dr Elke König, Chair of the Single Resolution Board (SRB), will come to the European Parliament for a public hearing of the ECON committee in November 2018. In the context of this paper on liquidity in resolution, the author suggests asking the following questions during the Q&A part of the hearing:

- In previous communications you have expressed that there is a need for a temporary public backstop funding mechanism. Could this public backstop, for instance, be at least partially replaced by a broadening of the capacity of the Single Resolution Fund (SRF) to raise private contributions? Future commitments could, for instance, be used to leverage the SRF. Liquidity in resolution could then be addressed by SRF-guaranteed liquidity from central banks.
- A central bank solution for liquidity in resolution would only be a solution for resolved banks and not for non-bank resolution tools such as asset management companies (AMCs). Could the SRF, potentially in combination with a revolving credit line from the ESM of a similar size, be sufficient to provide liquidity/funding for AMCs? Or would it constrain the SRB too much in its resolution actions?

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