

Why there is no need to stray from the original ideas behind the Bank Recovery and Resolution Directive*

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The idea behind the Bank Recovery and Resolution Directive (BRRD) was to let creditors pay for bank failures and not let bankers land on a tax payer with the associated risk of a doom loop, where banks drag countries down. Unfortunately, many supervisors have been hesitant in their support for the BRRD and in particular on imposing losses on bank creditors. In the banking union, the Single Resolution Board (SRB) has sent banks on to national authorities, who have decided to use national liquidation procedures; often another term for bail out.

The BRRD was revised in 2019 (BRRD2) and the Commission has announced that they are working on a new directive, the Crisis Management and Deposit Insurance Directive (CMDI). BRRD2 in some respects steps back from the original ideas behind the BRRD by either making it more difficult to bail-in creditors or strengthening incentives to procrastinate instead of undertaking prompt corrective action. It is important that the CMDI does not do the same.

The purpose of this paper is to show that in most instances the BRRD would work as intended with a bail-in of senior unsecured claims, but with a fairly limited bail-in. A limited bail-in that reflects the risk premium that investors receive on senior debt and the likelihood of a bail-in. The prompt corrective action is taken, the less losses to senior unsecured claims. Therefore, prompt corrective action is also a good way to minimize contagion.

*The views expressed are those of the authors and not necessarily their institution. Comments from Anders Balling and participants at seminar at the IMF are gratefully acknowledged.

The basic idea of the Bank Recovery and Resolution Directive (BRRD)

When a bank fails somebody has to pick up the bill. On the one hand you have the shareholders, the various forms of subordinated creditors, the senior unsecured claims, and the depositors that are not guaranteed by the deposit insurance fund. On the other hand, you have the general public in various disguises; the tax payer, resolution funds and the deposit insurance fund.

Historically in the EU, the choice was for the shareholders and then the tax payer to pick up the bill, but with the BRRD the intention was to shift the bill from the tax payer to the creditors. The argument was both necessity and fairness. Necessity because governments could not afford to pay and fairness because creditors had received an above risk free rate on their claims. In addition, this would give the creditors incentives to monitor the banks they had claims on and charge a risk premium that reflected the risk. The latter would give the bank an incentive to limit its risk taking.^{1,2}

The BRRD contained one notable exception to shifting the risk to creditors. The BRRD introduced resolution funds (Single Resolution Fund (SRF) or national). These funds can contribute up to 5 percent of total liabilities and own funds (TLOF) in terms of absorption of losses on the condition that 8 percent of TLOF had been written down or converted into new capital. More on the precise mechanism shortly. However, the bottom line is that the resolution fund is an insurance with a decent excess payment and limited coverage. In other words, an insurance designed to avoid the worst of moral hazard.

You can ask, why can we not handle banks through the standard bankruptcy procedure like any other company. The answer is that depositors, including unguaranteed depositors, needs access to their deposits – or most of them – in order to make the payments that are crucial for their day to day business and the economy at large. And on a good day, they should also have access to their credit facilities, which many use to make payments.³ They cannot wait the 10 years or more that a bankruptcy process takes. However, they can afford a small haircut, and that is even more true for senior debt holders, to cover the deficit in the failing bank's balance sheet.

The smart idea in the BRRD is that it takes the liquidity problem out of a bank failure, but still lets the creditors pay. It does so by the resolution authorities making a qualified conservative estimate of the funds required to repair the hole in the bank's balance sheet.

Depending on the resolution strategy for the bank, the bank will either continue as a bank or its assets and most of the liabilities will be transferred to another bank. Again, the precise mechanism will be explained later. However, this makes it likely that most of the credit facilities will stay open.

The more subordinated liabilities (own funds and senior non-preferred debt) a bank has, the less of a risk to senior unsecured claims and uncovered depositors. The BRRD requires banks that should be resolved to hold more subordinated liabilities than the capital directives and regulation requires so that senior unsecured claims and uncovered depositors are better protected. The requirement is called Minimum Requirement for own funds and Eligible Liabilities (MREL). At the global level the term is Total Loss Absorbing Capacity (TLAC).

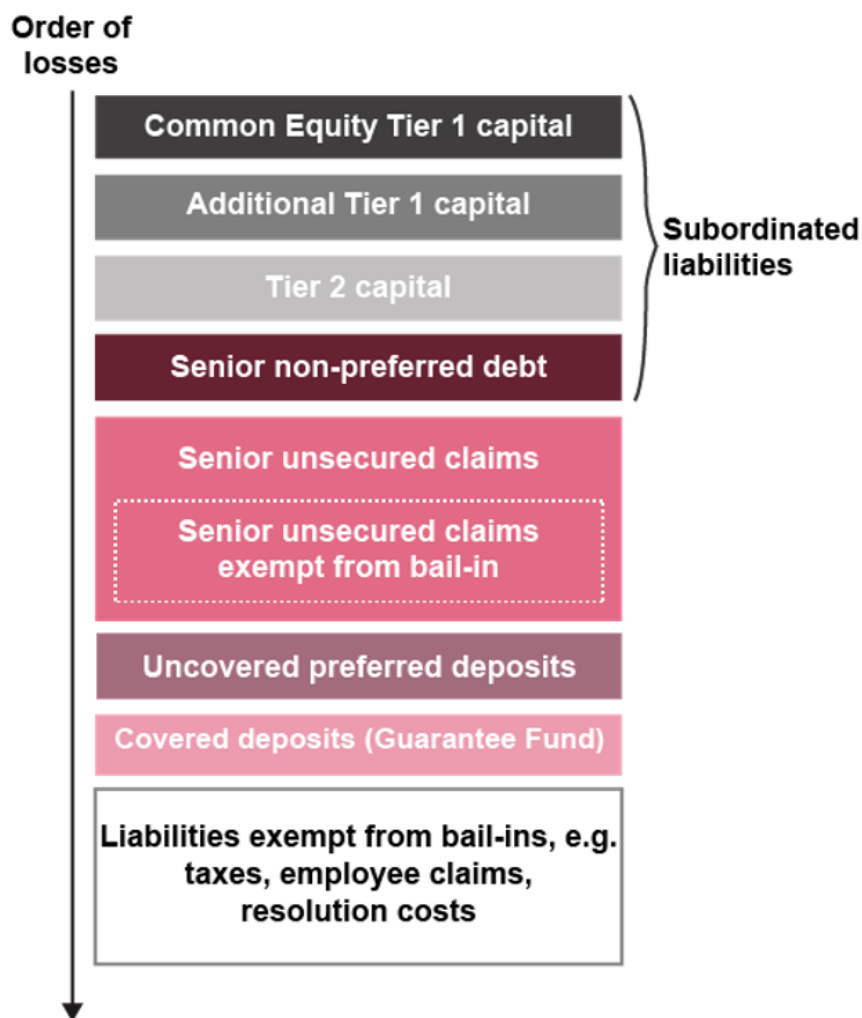
The stacking order of the various liabilities under BRRD is illustrated in Figure 1.

¹ Goodhart and Avgouleas (2014) query the possibility to handle systemic crisis through bail-in.

² Avgouleas and Goodhart (2019) describe how incentives should work.

³ Ringe (2017) also describes why bankruptcy is not appropriate for banks.

Figure 1: Stacking order of liabilities



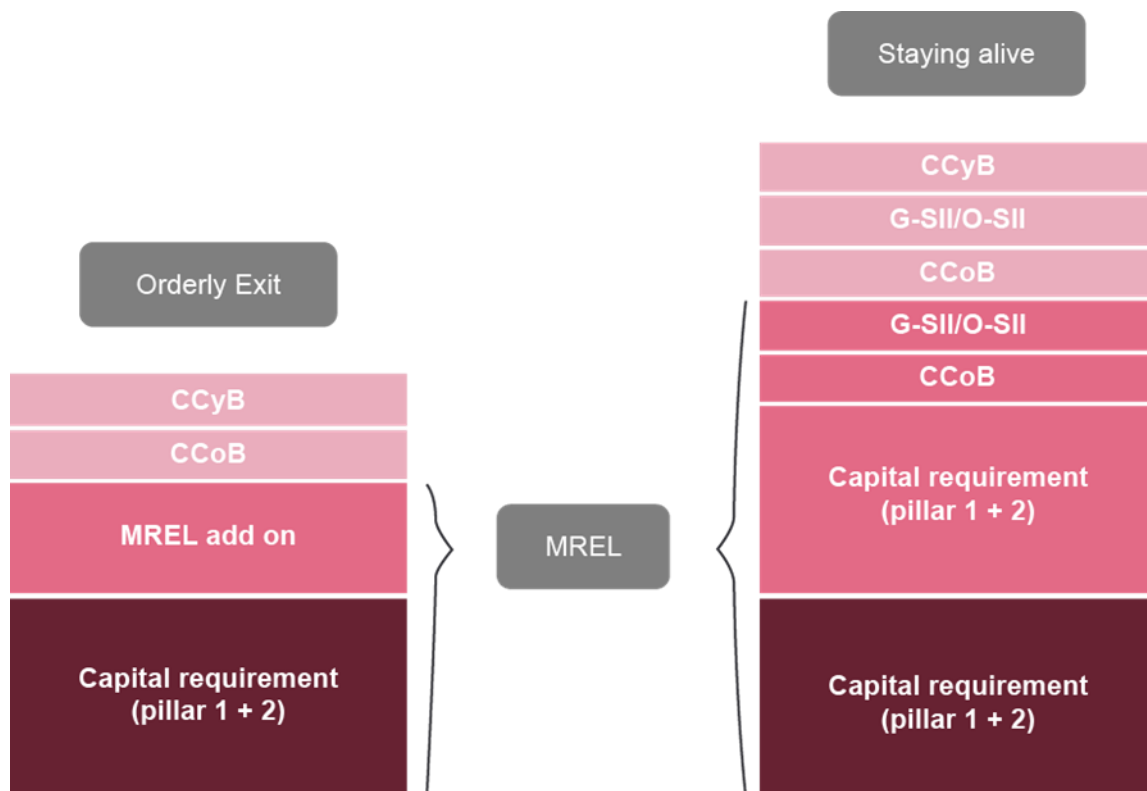
Source: Larsen and Rommer (2021).

At the top you have common equity tier 1 capital, which takes losses first, then follows additional tier 1 capital (AT1) and Tier 2 capital (T2) (all three together constitutes own funds). Senior non-preferred debt is a new type of liability that was introduced by BRRD and is included in MREL. BRRD2 also allowed senior debt to be part of MREL up to certain limits. As elaborated upon in Berg and Bjerre-Nielsen (2020) that was a bad idea. Consenting adults are also a good idea, when it comes to who takes losses. Investors in senior non-preferred debt cannot claim not to be consenting.

The resolution strategy determines how much MREL a bank needs. If the resolution strategy is to liquidate a bank no additional MREL is required on top of the capital requirement. This makes liquidation attractive ex ante for banks. However, often views change at the day of reckoning.

There are two other generic resolution strategies. The first is to keep the bank alive and the second is to ensure an orderly exit. Figure 2 shows the MREL for the two strategies.

Figure 2: Minimum Requirement for own funds and Eligible Liabilities (MREL) for staying alive and orderly exit



Note: CCoB is the Capital Conservation Buffer, G-SII/O-SII is the buffer for global and other systemically important institutions, CCyB is the Countercyclical Capital Buffer. Some countries also add a Systemic Buffer. MREL add on is the minimum requirement for own funds and eligible liabilities which is added to the capital requirement of banks with an orderly exit strategy.

For the staying alive strategy, you need MREL to be almost double up of capital requirements. In order to stay alive, the bank needs to be recapitalized after losing its original capital. The staying alive strategy is the typical strategy for large banks that the economy cannot afford to close because of their role in the economy.

For the orderly exit strategy, the bank only needs the level of MREL that is sufficient to convince another bank to take over its assets and liabilities after the bank has lost its capital. The other bank will typically require a haircut and the additional MREL needs to cover the haircut. Thus, the two strategies require very different levels of MREL. The orderly exit strategy can be used for medium sized and smaller banks.

The liquidation strategy is the preferred strategy within the banking union, if measured by number of banks subject to this strategy, cf. Table 1.

Table 1: Resolution strategy choices

	Resolution Strategy	Liquidation Strategy
Single Resolution Board	90	20
Banking union national authorities	64	2,000
Denmark	50	5

Source: Single Resolution Board and Danish Financial Supervisory Authority.

The Single Resolution Board prefers resolution, whereas the banking union national authorities prefer liquidation. In Denmark, almost all banks are subject to a resolution strategy. Rumors have it that the Commission very sensible is considering to push for more banks having a resolution strategy.^{4,5}

We promised to return to the mechanics of how to calculate the 8 percent write down of total liabilities and own funds (TLOF) required to access the resolution fund. There are three valuation approaches in the BRRD. To calculate the 8 percent, we need to understand Valuation 1 and Valuation 2. They are both assessed at the time of failure.

Valuation 1 is similar to the supervisory assessment, whereas Valuation 2 is more conservative taking into account the costs of resolution. Typically, collateral will have a lower value under Valuation 2 than under Valuation 1. There will also be more provisions to the uncollateralized part of the loans under Valuation 2 than under Valuation 1. Both the Single Resolution Board (SRB) and the European Banking Authority (EBA) have publications on how to do the valuations.⁶ The need for write downs of liabilities and conversion into new capital is based on the more conservative Valuation 2 balance sheet.

Who pays?

The idea with the current European resolution scheme is that investors and creditors will be bailed in to cover losses and recapitalize a failing bank. This mechanism protects public funds.

A resolution fund can contribute to cover losses and recapitalize a failing bank. However, in order for the resolution fund to cover losses, liabilities amounting to 8 % of TLOF has to be written down or converted into capital. And in this situation the fund can contribute with 5 % of TLOF to cover losses and recapitalize the bank.

In Figure 3 below we have two examples (Orderly Exit Bank and Staying Alive Bank) of currently healthy banks. The two banks run different business models, e.g. the Staying Alive Bank has lower average risk weights than the Orderly Exit Bank, resulting in liabilities amounting to a higher multiple of the risk exposure amount (REA).

The banks are illustrated with their creditor hierarchy in the middle columns. In the bottom of the columns we have own funds, which bear losses first in the case of resolution. In the top we have deposits, which bear losses last. This is in reverse order compared to the creditor hierarchy presented in Figure 1.

In the left most columns we have examples of Valuation 2 losses corresponding to 10 % (dark green) and 20 % (both dark and light green) of total lending. There are few observations of the difference between Valuation 1 and 2. However, two observations suggest that loans have to be written down between 10 and 20 percent⁷. In addition to write-downs, Valuation 2 also needs to include resolution costs and litigation costs. The limited experience suggests that these can also amount to 10 percent or more. A write-down of 10-20 percent on a bank's loan portfolio is substantial. During the financial crisis, the average write-down on bank loans in the EU and Denmark was respectively 1,0 and 1,5 percent in 2009 and 0,7 and 1,0 percent in 2010.

⁴ Avgouleas and Goodhart (2019) raise the question that a bail-in can result in spillovers.

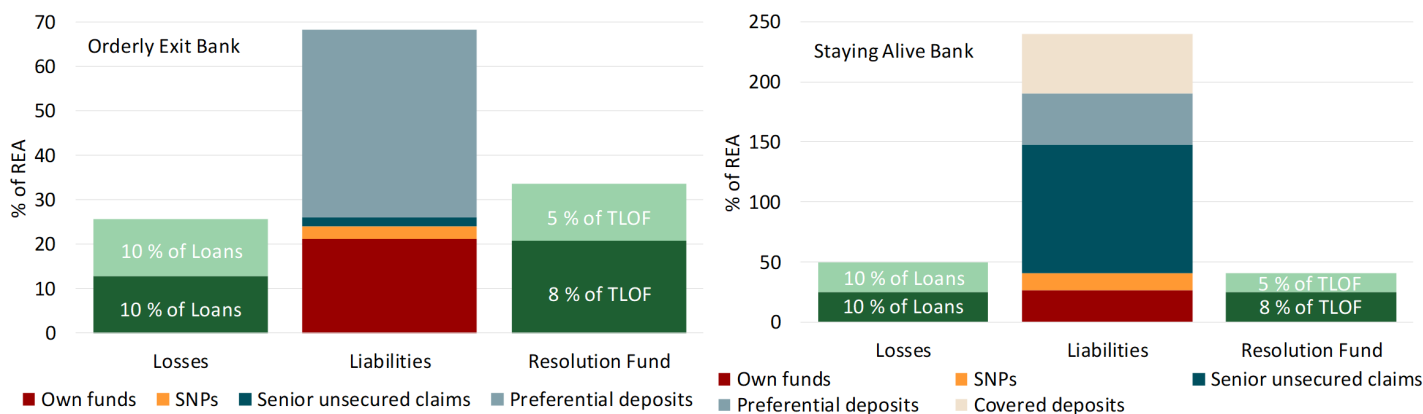
⁵ Gelpern and Veron (2019) show that national insolvency procedures leave space for bank bail-outs.

⁶ SRB (2019) and EBA (2019).

⁷ PWC (2020) and Deloitte (2022).

In the right most columns we have 8 % of the banks' TLOF (dark green) and on top of that we have 5 % of the banks' TLOF. If the banks were to be sent into resolution it is possible to write down own funds corresponding to 8 % of TLOF and thus have access to cover losses by the resolution fund. For example, if Valuation 2 removes values corresponding to 10 % of total lending, then the resolution authority can write down own funds, convert senior non-preferred debt (SNP's) to new capital and add capital from the resolution fund thus protecting holders of simple claims from being bailed in.

Figure 3: Healthy Banks

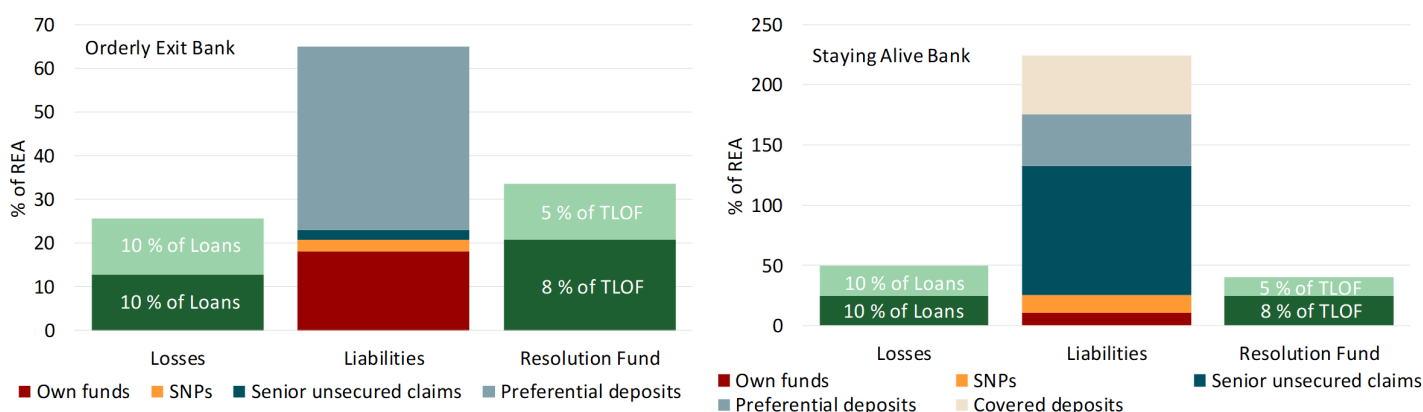


Source: Danish Financial Supervisory Authority. Note: Data for covered deposits not available for Orderly Exit Bank. REA is risk exposure amount, TLOF is total liabilities and own funds, SNPs are senior non-preferred debt.

If authorities hesitate to send a bank into resolution the case becomes more difficult. In the example in Figure 4 below the banks have incurred losses and have own funds and SNPs left corresponding to 8 % of TLOF. The Valuation 2 process will add further losses. If Valuation 2 also in this scenario removes values corresponding to 10 % of lending (25 % of REA) in the Staying Alive Bank, then the resolution authority can write down all remaining own funds and senior non-preferred debt (SNPs). This corresponds to write downs of 8 % of TLOF and the bank gets access to the resolution fund. The resolution fund can recapitalize the bank to 5 % of TLOF. However, this might not be enough to fully recapitalize the bank, and thus senior unsecured claims have to contribute. In order to protect senior unsecured claims, authorities must act before too much capital is lost.

The situation for the Orderly Exit Bank is somewhat similar. It has a higher capital to loans ratio and is thus able to cover Valuation 2 losses corresponding to 16 % of lending (21% of REA) with own funds and senior non-preferred debt (SNPs). If Valuation 2 losses exceeds 16 % then the resolution fund has to pay in order to protect senior unsecured claims and preferential deposits.

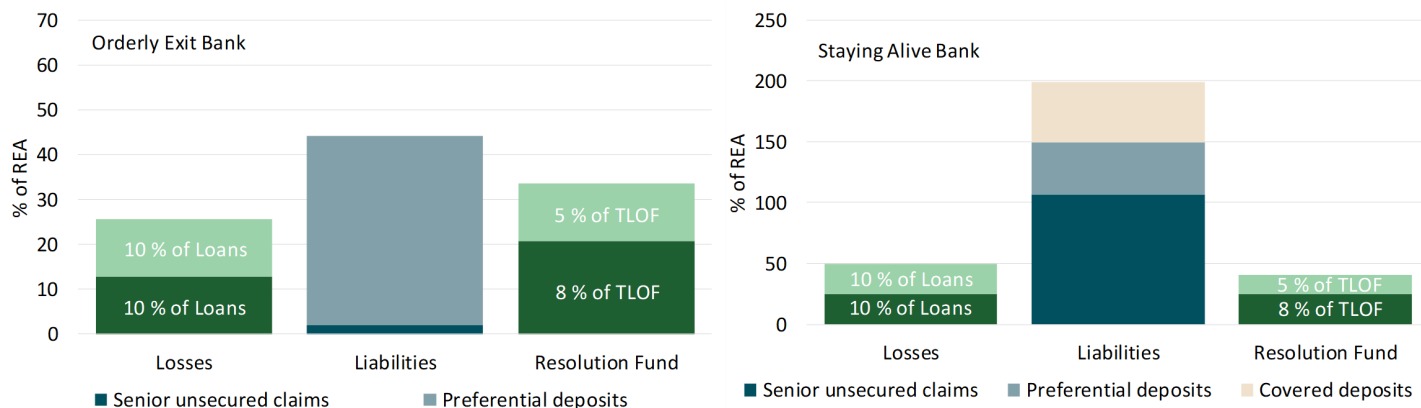
Figure 4: Banks after initial losses



Source: Danish Financial Supervisory Authority. Note: Data for covered deposits not available for Orderly Exit Bank. REA is risk exposure amount, TLOF is total liabilities and own funds, SNPs are senior non-preferred debt.

In Figure 5 below we imagine that more time has passed, all capital is lost and senior non-preferred debt (SNPs) has not been refinanced. The banks are bankrupt if they are not sent into resolution. In resolution the Valuation 2 process will add further losses. Senior unsecured claims and preferential deposits (Orderly Exit Bank only) will have to be written down and converted into new capital. This illustrates that if authorities do not act in a timely manner then losses end up at holders of senior unsecured claims and depositors.

Figure 5: Banks without own funds or senior non-preferred debt



Source: Danish Financial Supervisory Authority. Note: Data for covered deposits not available for Orderly Exit Bank. REA is risk exposure amount, TLOF is total liabilities and own funds.

The examples above should make it clear that the resolution costs that depositors and senior unsecured claims have to bear is dependent on the Valuation 2 losses and the remaining amount of own funds and senior non-preferred debt when a bank is sent into resolution. Higher losses result in higher costs, and less own funds and senior non-preferred debt also results in higher costs to depositors and senior unsecured claims.

Table 2 below is a stylized example showing how much of the senior unsecured claims and preferential deposits in the Orderly Exit Bank that must absorb losses depending on remaining own funds and senior non-preferred debt as % of TLOF (columns) and the Valuation 2 losses in % of lending (rows). When doing the calculations, we assume that resolution authorities will write down and convert up to 8 % of TLOF and use 5 % of TLOF from the resolution fund to cover losses if necessary to protect depositors and senior unsecured claims.

Table 2: Orderly Exit Bank
Loss absorption by simple claims and preferential deposits
 (as % of senior unsecured claims and preferential deposits)

		Remaining own funds and senior non-preferred debt		
		8%	4%	0%
Losses	10%	0	2	17
	20%	0	15	31
	30%	2	17	33
	40%	19	35	50

When remaining own funds and senior non-preferred debt is high (8 % of TLOF) then the bank can sustain a significant amount of Valuation 2 losses (around 30 % of lending) without imposing losses on preferential deposits and senior unsecured claims.

We have done the same calculation for the Staying Alive Bank. The results are similar, i.e. when remaining own funds and senior non-preferred debt is 8 % then the bank can sustain around 30 % Valuation 2 losses without imposing losses on senior unsecured claims. No losses are imposed on preferential depositors in the Staying Alive Bank as the bank has a significantly larger pool of senior unsecured claims that absorb the losses.

Table 3: Staying Alive Bank
Loss absorption by senior unsecured claims
(as % of senior unsecured claims)

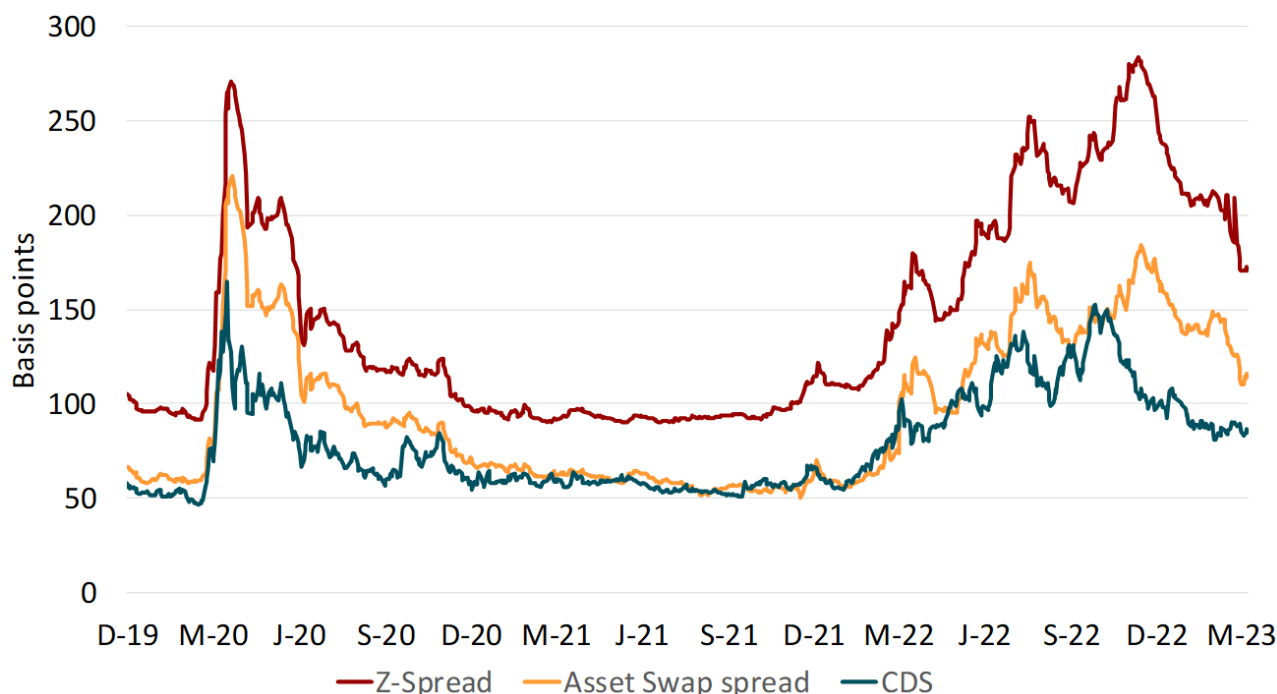
Remaining own funds and senior non-preferred debt		8%	4%	0%
Losses	10%	0	2	11
	20%	0	9	18
	30%	5	14	23
	40%	16	25	34

Senior preferred debt is part of the senior unsecured claims and thus share losses with other senior unsecured claims in resolution. This means that even in the most severe scenarios (40 % Valuation 2 losses) senior debt holders will recover most of their value.

These scenarios are fortunately very rare events. The average one-year default rate of rated financial institutions were 0,6 % over the period 1981 to 2021.⁸ The low default rate on financial institutions and the high recovery rate on banks senior preferred debt in case of resolution indicate that credit risk on senior preferred debt is low. In the most severe scenario in table 3 losses are 34 %, and thus a back-of-the-envelope calculation shows that the one-year expected credit loss should be no more than 0,2 % (0,34x0,6).

In figure 6 we have three different expressions of the risk premium on financial senior debt. The average is between 0,8 % and 1,5 % in the selected period. Combined with our calculations above, this leads us to conclude, that senior debt holders are well compensated for the small risk they are running.

Figure 6: Risk premium on financial senior debt



Source: Bloomberg and Refinitiv. The data series are iTraxx Europe senior financials CDS index (5 year, generic), iBoxx Europe senior financials Asset Swap Spread and iBoxx Europe senior financials Z-spread.

⁸ Standard & Poor’s Financial Services (2022).

The role of the deposit insurance fund

The deposit insurance fund plays a very limited role in the examples above. Covered deposits have an almost super preferred status and that status is inherited by the deposit guarantee fund, if losses were of a size, where the deposit guarantee fund has to cover deposits. The examples show that losses are highly unlikely to be of a size, where this would happen – unless supervisors seriously neglect their responsibility.

The examples shown above assume either a staying alive strategy or an orderly exit strategy. In both of these strategies, depositors will have access to their deposits shortly after the resolution is implemented. The strategy will not involve pay outs from the deposit guarantee fund. Thus, there is no issue in relation to either capital or access to liquidity for the deposit guarantee fund.

If a bank is liquidated, e.g. through normal bankruptcy procedures, the deposit guarantee fund is still unlikely to suffer losses given its creditor status. However, the deposit guarantee fund may need access to liquidity given lengthy bankruptcy procedures. If only smaller banks are subject to liquidation, national deposit insurance funds should be capable of handling the liquidity requirements.

A mutual deposit insurance fund across the banking union is often described as the missing part of the banking union. A more apt description would be the unnecessary part of the banking union.

There are a lot of money in both resolution funds and deposit insurance funds and it is always tempting to use such pots of money for what appears to be noble purposes. The resolution funds are already supposed to chip in, subject to the above conditions, to reduce losses for creditors. Why not also use deposit insurance funds for this purpose instead of leaving the money idle?

There are at least four good reasons for not doing this.

One, as shown above the likely losses to senior creditors are small. As shown senior creditors can expect a return above the risk free rate that on average more than cover their likely losses. It is only fair that part of their excess return has to go to cover losses.

Two, not only is it fair, but it also contributes to the right incentives. By being exposed to losses, if a bank takes too much risk, senior creditors will monitor banks risk taking and price their senior credit to reflect the risk. This induces the banks to balance their risk taking.

Three, neither the resolution funds, nor the deposit insurance funds have descended like manna from heaven. The funds come from the banking system and a large part has been paid by depositors, as costs like taxes are passed on to customers. Thus, there is a limited difference between bail out by tax payers and bail out through the deposit insurance fund.

Four, supervisors are no different from other human beings and also respond to incentives.⁹ It is standard operating procedures to focus on the failure of supervisors, when a bank fails. Many a supervisor has lost their job as a result. Every day a supervisor keeps a bank alive, they keep their job for another day. This can give an incentive to procrastinate. That incentive is strengthened, if procrastinating shifts the costs of a failure from individuals to a pot of money few know how originated.

⁹ Ringe (2017).

The US savings and loan crisis is an example of the cost of forbearance. As a result, the US implemented the Federal Deposit Insurance Corporation Improvement Act (FDICIA). The Bank Recovery and Resolution Directive (BRRD) is modelled on FDICIA. However, FDICIA also included requirements for supervisors to take prompt corrective action.^{10,11}

Prompt corrective action lowers the put option of shareholders in a bank. The threat of prompt corrective action also increases the incentives of shareholders to run their bank with due respect to risks and to put in extra capital if needed.

Forbearance gives creditors, including senior preferred creditors, a chance to get out. It is not a coincidence that investment banks organize senior preferred debt with a fairly short maturity and a pre-payment option that banks are expected to use.

There is already a risk that extreme forbearance could result in banks, where the only liabilities are insured deposits and collateralized central bank borrowing. A mutual deposit insurance fund could further skew incentives for national supervisors towards forbearance.

Concluding remarks

The original ideas behind the BRRD are sound and should be maintained. BRRD2 slid on some issues in the wrong direction. The Commission is right to aim for more banks to be subject to a resolution strategy.

The BRRD includes the use of some common funds (from the resolution fund) to take some of the losses. Our calculations show that the present set up normally will only impose limited losses to senior creditors for large banks and for uncovered depositors for a smaller bank. The aggregate losses are less than the aggregate earnings on senior debt above the risk free rate.

Prompt corrective action is important, if we want to limit losses to senior creditors and preserve correct incentives. While it may be tempting to use deposit insurance funds to cover losses, this is a bad idea as it distorts incentives, also in relation to supervisors.

If supervisors act sufficiently early, there is limited risks of losses on liabilities that can run. This reduces contagion risk. If contagion risk, nevertheless, continues to be an issue, we need to ask ourselves, whether the post financial crisis reform of financial regulation were sufficient. ■

¹⁰ Berg and Bech (2009).

¹¹ Time will hopefully reveal what went wrong in relation to Silicon Valley Bank. An obvious question is why supervisors did not intervene earlier following the losses on securities in the banking book that discarded mark to market practices. Another question is why authorities abandoned the initial bail-in strategy, in particular given the large amount of presumably liquid securities that could have generated a reasonable cash advance to uninsured depositors.

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