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Resolution tools in the opinion of EU resolution authorities

Introduction

The features of the business of banking imply that credit institutions are particularly exposed to multiple risks, whose materialization may lead to their bankruptcy. This, however, is usually accompanied by high costs for various bank stakeholders, e.g. owners, bondholders or governments, especially when in the banking sector the so-called 'too-big-to-fail' or ‘'too-many-to-fail'’ problems had developed. In such a case, systemic crises usually occur which are exceptionally severe and may even spark the problems for whole countries (e.g. the sovereign debt crisis).

The above described phenomenon took place in Europe after 2007. As a remedy, the European Union (EU) introduced a special legal framework to manage systemic banking crisis more effectively – a bank resolution regime which was transposed into the national laws in all EU Member States.

Resolution means a centralized, legal (but out-of-court) and operational mechanism of carrying out the restructuring or orderly liquidation of financial institutions while maintaining their critical functions, protecting deposits covered by deposit guarantee schemes, preserving public funds, and avoiding a negative impact on the financial stability by preventing the domino effect (Szczepańska, Dobrzańska, Zdanowicz, 2015). It should be emphasized that the purpose of the resolution process is to solve the banks’ problems by the private sector, rather than the public sector taking over the existing threats. The banking entity itself, its subsequent fate, and in particular the consequences for its owners, are less significant. Therefore the idea of the resolution seems to have been already succinctly expressed by the words of Bill Gates in 1994: ‘Banking is essential, banks are not’.

Table 1.
Comparison between standard insolvency procedure and resolution

Criterion	Standard insolvency	Resolution regime
Type of procedure	No dedicated rules for the banking sector	Special, formalized process arranged specially for banks
Aim of the process	Bank liquidation and the deposit pay-out or public support (when the deposit pay-out is not possible due to e.g. lack of funds in the deposit guarantee scheme)	Continuation of the bank's critical functions without public support
Use of public funds	Frequent	Abandoned
Approach to the domino effect	Prevention	Prevention
Length of procedure	Long	Shorter

Source: own work.

The resolution framework in the EU is based on the Bank Recovery and Resolution Directive (BRRD)[1], which introduces, inter alia, the obligation to create in each Member State a special resolution fund (financed by banks) and provide for a wide range of powers for the resolution authorities to run a theoretically effective and efficient mechanism for resolving banks. These privileges include the ability to select the resolution method for resolving bank problems from the available resolution tools. The introduced resolution toolkit includes the following instruments:

1) sale of the business;
2) establishment of a bridge institution (or asset management vehicle, a so-called bad bank);
3) bail-in;
4) separation of assets (used together with another resolution tool).

Table 2.
Main pillars of the BRRD

Main pillars of the EU bank resolution regimes			
Creation of the resolution authorities responsible for the crisis management in the banking sector	Introduction of the resolution planning	Providing the resolution authority with a wide range of tools, which can be adopted without the bank owners' consent	Creation of the resolution funds

Source: own work.

[1] Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council.

The admissible set of tools and powers should, according to the authors of the new EU crisis management architecture, ensure that banking crises will never require the usage of public funds, as the banks defaults will be managed only within the private sector (under the control of the public authorities).

But what is the effectiveness of the proposed tools? What is the opinion of the resolution authorities responsible for the utilization and monitoring of the implementation of the tools about their efficacy? The goal of this paper is to evaluate the appropriateness of the resolution tools based on a survey among the EU resolution authorities.

The paper is organized as follows: the first part contains a review of the empirical studies regarding the effectiveness of the tools enumerated in the BRRD. The second part contains the results of a questionnaire conducted among the EU resolution authorities regarding their assessment of the effectiveness of the resolution tools. The final part of the paper comprises conclusions and policy recommendations.

1. Literature review

Usually, the examples of banking crisis brought about extensive literature about the causes and results of the application of various tools aimed at improving the standing of failing banks. Every crisis is, however, different in its reasons, course and effects and therefore its analysis can contribute to the better understanding of the efficacy of bank resolution tools. Thus in order to embrace the widest possible set of aspects related to the effectiveness of the resolution tools, the publications spanning almost 30 years were analyzed. Nevertheless, the research suggests that the efficiency of the crisis management tools proposed in the BRRD is ambiguous.

The analysis of the empirical studies on the **bank business sale tool** indicates that the mergers and takeovers were associated with lower costs than liquidation and, additionally, the average loss of the assets' value was less significant (James, 1991). What is more, such transactions could even have a positive impact on the charter value of the bank (Bhuyan, Ar-Loc, Vaziri, 2010). Other research shows that the financial markets reacted usually positively on the information that a failing bank was going to be sold, especially when the transaction was supported by the public authority (Cole, Eisenbeis, McKenzie, 1994). The costs of the purchase and assumption (P&A) transactions seemed to be lower and the process of the implementation of the tool was usually shorter than in any other case (Bennett, Unal, 2009). Mergers and acquisitions seemed to improve the safety of the bank measured by the distance to default (Huertas, Lang, Mester, Moon, 1996). Moreover they appeared to be an example of an effective asset allocation and should not negatively impact on the competition on the market (Dunn, Intintoli, McNutt, 2014). However, there are also surveys suggesting that the increase in

a bank's effectiveness after a takeover was not sustained in the long run (Allen, Boobal-Batchelor, 2002). In particular big mergers were deemed to have illusive effects of scale, as they were motivated by the "too-big-to-fail" doctrine (Harada, Ito, 2011; Song 2012). What is more, P&A deals (even with support from the state) turned out to be positively correlated with the bank's collapse within the next five years (Hryckiewicz-Gontarczyk, 2014).

Regarding the **bridge bank**, the analysis of ten examples of such entities in the USA shows that the creation of such an institution did not allow for keeping critical bank functions (especially lending) on the previous level (Ashcraft, 2003). Similar conclusions could be reached after the analysis of the functioning of the bridge banks in the EU during the financial crisis 2007+.

The inconclusive findings could also be derived for the application of the **bad bank**. Part of the research indicates that bad banks usually played an essential role in the recovery of the banking sector after a crisis (Dziobek, Pazarbasioğlu, 1997). They successfully took over a significant part of the non-performing assets, mitigated liquidity and the capital problems of banks (Fung, George, Hohl, Ma, 2004) and thus encouraged banks to provide further funds to the economy (Alford 2012). Bad banks were sometimes assessed as a useful tool to quickly remove the problematic assets from the banks' balance sheets, enabling the provision of normal banking functions (Ingves, Seelig, He, 2004). Nevertheless, it was also indicated that the recovery rates (for the assets transferred to the bad bank) were usually low (Fung, George, Ma, 2004). Additionally, the creation of a bad bank was sometimes linked with the increase in the level of NPLs in the rest of the sector (Terada-Hagiwara, Pasadilla, 2004). On the whole, the effectiveness of a bad bank as the resolution tool may depend on a range of factors, including the type of assets (easily transferable), kind of management (professional, not political), source of funding (reliable and prior agreed) and type of ownership (private is usually more efficient) (Klingebiel, 2000; Gandrud, Hallerberg, 2014).

Relatively meager literature can be found regarding the quantitative research on the effectiveness of the **bail-in** tool. However, more theoretical analysis suggests that the application of the bail-in will significantly reduce the need to support a bank with public funds (Szczepańska, Dobrzańska, Zdanowicz, 2015). Additionally, the possibility to implement a bail-in should incentivize stakeholders to monitor the banks' operations more precisely and, in this way, increase the level of market control over the banks (Goodhart, Avgouleas, 2014). Nevertheless, one tremendous and currently undervalued drawback of the bail-in tool is the contagion that can be initiated after the decision on the write-down or conversion of the capital or bank debt (Huertas, 2014).

The empirical studies usually confirmed the low effectiveness of **liquidation** subject to standard insolvency procedure. This was usually associated with the high loss of value (James, 1991), significant fluctuations in the whole banking

sector and the unpredictable consequences for the macroprudential policy (Anari, Kolari, Mason, 2002).

2. Effectiveness of the resolution tools in the opinion of EU the resolution authorities

In order to evaluate the level of the usefulness of the bank resolution tools for the resolution authorities during an extreme crisis scenario (like in the banking crisis in the EU after 2007), a questionnaire was sent to the EU resolution authorities.

Out of 29 institutions (28 national resolution authorities and the Single Resolution Board as the resolution authority for the banking union) to which the survey was addressed, 14 decided to respond. However, only 6 countries chose to fully participate in the poll, which indicates a large reluctance of the authorities to contribute to the survey. This, in part, may result from the current work overload connected with the necessity to implement all EU regulations on resolution (mainly the need to draw up resolution plans for banks).

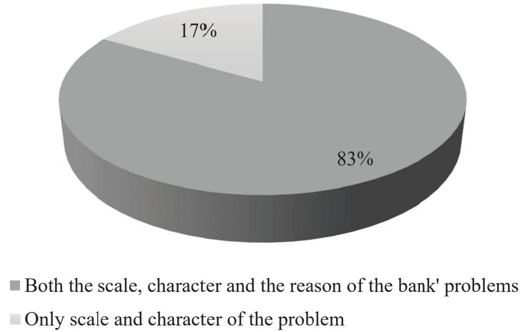
The authorities that decided to participate in the study were asked to answer 21 questions. The questions concerned both their subjective assessment of their own preparation for a systemic crisis as well as the evaluation of the efficacy of each resolution tool. The results of the questionnaire are presented below on an aggregated basis (not providing information about the respondents and not citing their answers) due to confidentiality reasons.

3. Results

The first part of the questions included in the survey concerned the relationship between the banks' problems (their causes) and the use of the resolution tools. The aim was to determine to what extent the resolution authorities take into account the factors that led to the collapse of the bank, what is crucial for the bank's continued functioning, and what aspects of the intervention are considered by the authorities when deciding to take over control of the bank and implement the selected tool.

It turns out that the majority of the authorities, while selecting the appropriate resolution tool, also consider (apart from the scale and the character) the causes of the banks' problems.

Figure 1.
Aspects taken into consideration when choosing the resolution tool

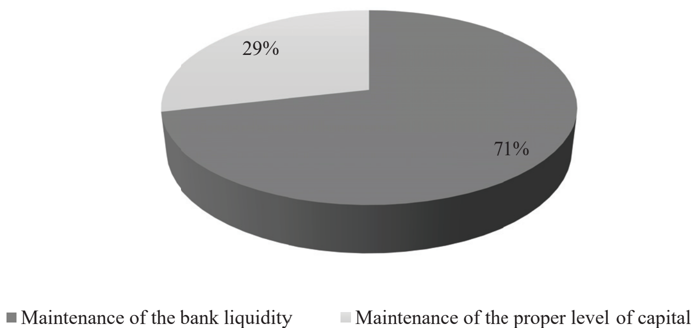


■ Both the scale, character and the reason of the bank' problems
■ Only scale and character of the problem

Source: own work based on the questionnaire among resolution authorities.

Nevertheless, irrespective of the factors that led to the problems of the bank, the key aspect contributing to the resolution's decisions is maintaining the liquidity of the bank. This reveals a mismatch between the BRRD instrument-set and the real needs when stabilizing banks during a systemic crisis, since the empirical research on the resolution tools proved that they worked better to improve the capital situation of banks, whereas in the case of systemic crises the key to the success of resolution is to safeguard the liquidity of the failing bank.

Figure 2.
Priorities in bank resolution



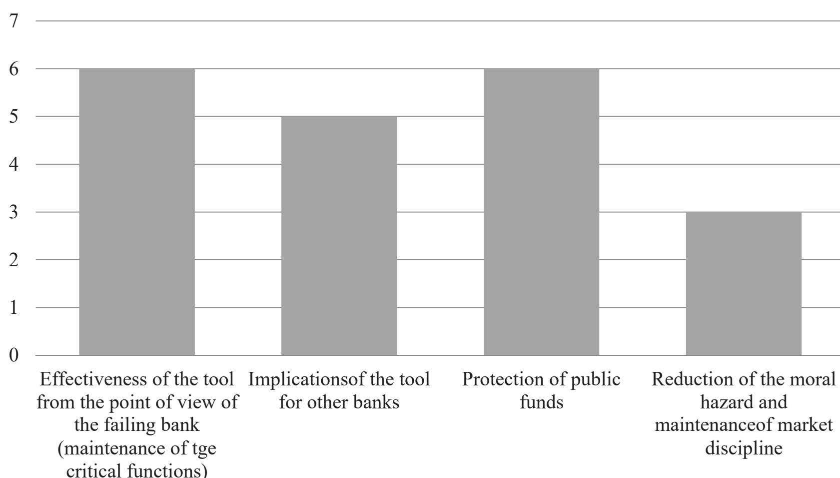
■ Maintenance of the bank liquidity ■ Maintenance of the proper level of capital

Source: own work based on the questionnaire among resolution authorities.

The survey confirmed that maintaining the bank's liquidity is crucial for further bank activity. It is possible to imagine the functioning of an undercapitalized bank, which serves its obligations on an ongoing basis, but it is not possible to operate an illiquid bank with a high level of own funds. For that reason, most resolution authorities indicated that the choice of the resolution tool was mainly

driven by its potential to remove the bank's problems (preserving its continuity, for which the liquidity is crucial) while limiting the negative impact on the public finances. Nevertheless, in the opinion of some resolution authorities, another important factor to be taken into consideration are the consequences of the use of specific tools for the rest of the banking sector. This indicates that the priority of the resolution authority after the outbreak of the crisis is usually to contain it and, thus, to prevent the systemic crisis. The least important factor for the authorities is to reduce the moral hazard and maintain market discipline. This indicates that when there is a need for decisive action to tackle the banking crisis, the priority of the authorities is to contain the crisis as quickly as possible and prevent its further spread with the lowest possible costs. Ideological issues and the shaping of the appropriate supervisory policy (through appropriate incentives) are of a lesser importance. This indicates that the resolution of banking crises is perceived by the effectiveness of the current actions, rather than their long-term consequences.

Figure 3.
Factors taken into consideration by the selection of the resolution tool



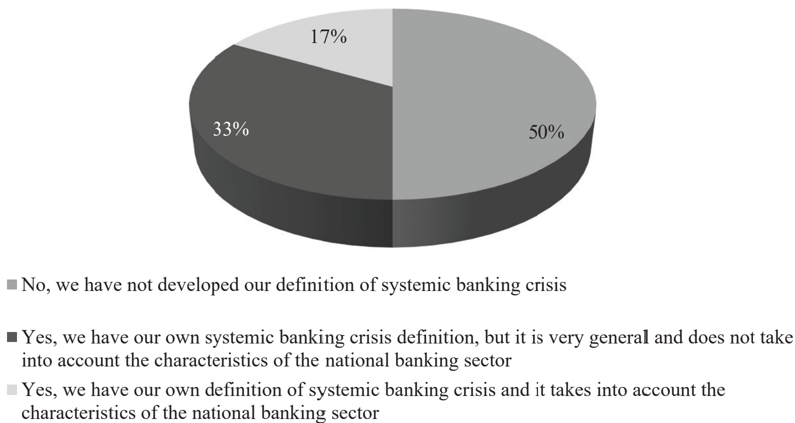
Source: own work based on the questionnaire among resolution authorities.

The resolution authorities, asked to rank the factors taken into account when choosing the resolution tool according to their relevance (mentioned above in the graph), usually pointed out in the first place the effectiveness of the tool for the bank in question and the implications for other credit institutions. However, there was also an opinion that it is not possible to assess the factors that would guide the resolution authority when choosing a tool until the whole procedure is started. The indication of priorities depends in its opinion on the circumstances of the specific crisis. While such an approach seems to be justified (due to the fact that each crisis can be associated with different causes, characteristics and its

course), the adoption of certain general guidelines and principles could streamline the decision-making process in the most crucial moments. For that reason the resolution authority should develop a set of rules which they should follow in the event of a crisis (for example, they should know in advance whether they intend to use public funds during the crisis or whether they are strictly prohibited; if not, special arrangements should be implemented to prepare for the quick – from a procedural point of view – usage of the needed funds). This does not mean that these detailed crisis rules should be published and communicated to market participants. The application of the principle of constructive ambiguity can be one of the factors that reduce the moral hazard among the market participants.

Second part of the questionnaire concerned the nature of the systemic crisis. The survey results show that although the resolution authorities take into account the potential consequences of the crisis for other banks, the systemic crisis is not a significant factor for them to develop specific solutions for that case. At least half of the resolution authorities do not have their own definition of a systemic crisis, especially taking into account the characteristics of the national banking sector. Nonetheless, developing such a definition would allow to identify potential adverse scenarios and prepare the appropriate procedures.

Figure 4.
Definition of a systemic crisis among resolution authorities

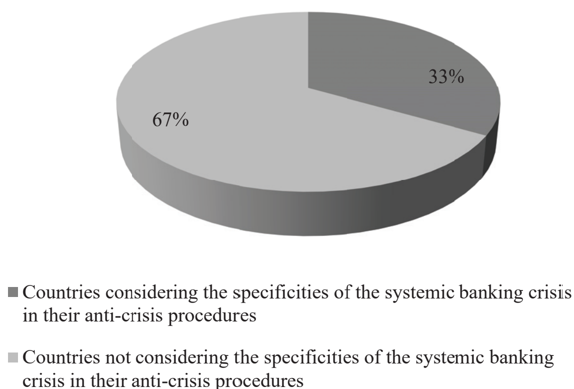


Source: own work based on the questionnaire among resolution authorities.

The survey shows that the resolution authorities do not analyze the phenomenon of the systemic crisis at all, or they only adopt its general definition proposed by the EU in the regulation establishing the European Systemic Risk Board: *‘systemic risk’ means the risk of distorting a financial system that can have serious negative effects on the internal market and on the real economy. All kinds of financial intermediaries, markets and infrastructures can to a certain extent have systemic*

potential. Most of the surveyed authorities explicitly admitted that they did not take into account the possibility of a systemic crisis in their anti-crisis procedures.

Figure 5.
Systemic crisis in the procedures of resolution authorities



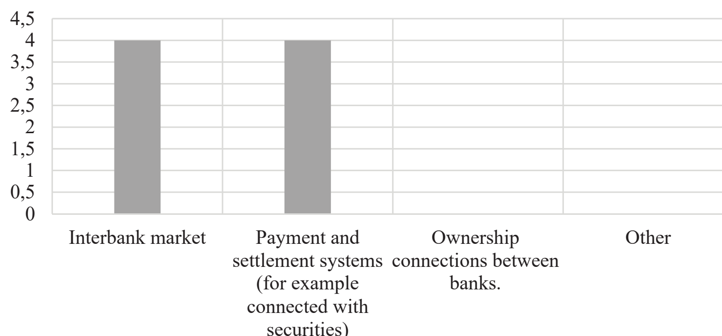
Source: own work based on the questionnaire among resolution authorities.

Only one of the responding authorities declared that it considered the phenomenon of systemic crisis by drawing up separate resolution plans for that eventuality. In fact the BRRD requires that the resolution plans are prepared on the basis of different shock scenarios. One of them should be to assume the possibility of a systemic crisis. This approach seems to be relevant because it allows planning of the resolution based on the various course of the crisis and its possible circumstances. Preliminary analysis of the possible use of the resolution tools in the event of a systemic crisis allows for the initial selection of the solutions that are unlikely to work properly for the institution. This speeds up the decision-making process at a time when quick and decisive action is required. Naturally, due to the nature of banking crises, it is not possible to plan the entire sequence of activities without knowing the specific circumstances accompanying the intervention. Nevertheless, preparing a preliminary analysis of the potential solutions that may be implemented during a systemic crisis speeds up the process.

The other resolution authority acknowledged that it took into account the systemic crisis in its procedures by adopting the principle that its actions should not create systemic risk. This approach is definitely inadequate as resolution interventions may also start during severe systemic crisis already in progress, and its existence may be a factor limiting the functioning of the authority. This should be taken into account in the resolution procedures in order to properly address the potential obstacles that may arise in different areas.

One of these may be the transmission channels that speed up the spreading of the crisis. The resolution authorities admitted that the most likely source of the crisis transmission was contagion on the interbank market or through the payment and settlement systems. Therefore the functioning of these two “infrastructures” should draw special attention from the resolution authorities.

Figure 6.
Main channels of contagion during a systemic crisis



Source: own work based on the questionnaire among resolution authorities.

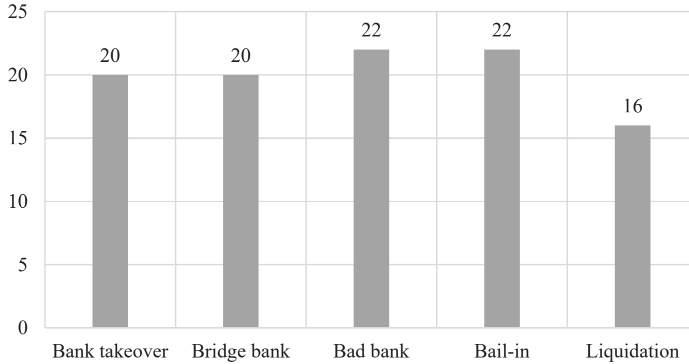
Additionally, the responses of the resolution authorities proved yet again that the key issue from the point of view of mitigating the crisis is to ensure an adequate level of liquidity. The interbank market and clearing systems are of crucial importance in spreading the crisis, as their functioning determines the safety of banks’ liquidity. In times of crisis, interbank markets (especially repo markets and bond markets) are dying out and prevent banks dependent on them from maintaining the liquidity, which in turn intensifies the crisis. The fact that ownership connections between banks were not indicated by any resolution authority proves once again that the key issue for resolution efficiency is liquidity, while the BRRD tools to a greater extent relate to the improvement of the capital situation of banks.

The third and last part of the questionnaire concerned directly the evaluation of the resolution tools by the resolution authorities assuming their potential use in the context of a systemic crisis. Here, the answers given by the resolution authorities are not entirely clear (especially when asked about the one most effective tool in the opinion of the authorities).

The authorities, asked to rate each tool on a scale from 1 to 5 (the highest performance rating), gave high marks to tools such as bad bank and bail-in. According to the answers to this question, the least effective tool in a systemic crisis is liquidation of a bank.

Figure 7.

Aggregated notes for bank resolution tools (assessed by the resolution authorities)

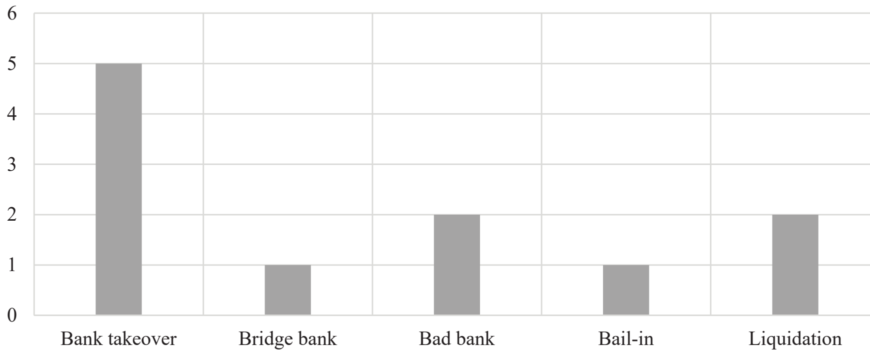


Source: own work based on the questionnaire among resolution authorities.

Nevertheless, the answers of the authorities to the next question (to point out only the one most effective, in their opinion, tool) led to a slightly different assessment, as the resolution authorities indicated the bank takeover.

Figure 8.

The frequency of indicating a selected resolution tool as the most effective



Source: own work based on the questionnaire among resolution authorities.

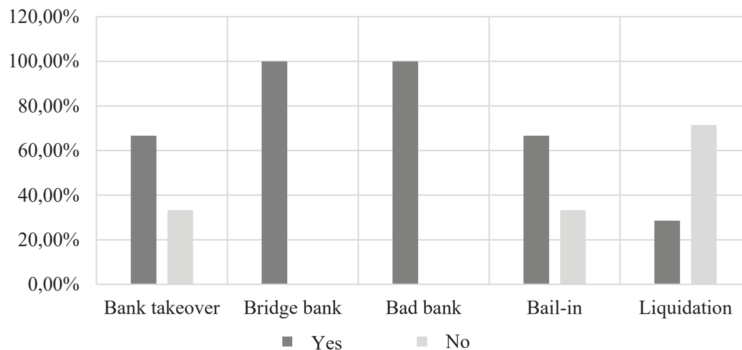
On comparing the answers to the previous question, bad bank and bail-in enjoyed much lower ratings. Also, the liquidation of the bank was chosen surprisingly often. It is difficult to explain the reason for such discrepancies. However, the difference may occur due to the lack of confidence about the effectiveness of the resolution tools. It is worth noting that many of the authorities were created in the past few years (after the financial crisis) and have little or no experience with the use of resolution tools (some of which were not used at all in the respective countries). For this reason, the evaluation of resolution tools could

cause difficulties for them. Nevertheless this should be reflected in the low (but similar) assessments of the individual resolution tools. One of the authorities also noticed that, in principle, each of the tools could be identified as the most effective in specific circumstances. According to the authority, the different types of bank problems can be solved most effectively using different resolution tools, so it is not possible to simply point out the best resolution tool in a systemic crisis. This approach seems to be very well-founded. Nevertheless, some of the tools (in particular bail-in and liquidation) appear to be unsuitable in the context of systemic crises because of their nature, irrespective of the specific conditions that could apply.

Such a conclusion seems to be confirmed by the further results of the survey. The resolution authorities were asked to indicate if it is possible for them to implement the listed resolution tools during the systemic crisis. The survey results once again showed that the most effective resolution tool can be the bad bank. All of the surveyed authorities do not see any barriers to the introduction of this tool during the systemic crisis. Similarly, high ratings were obtained by the bridge bank. A very weak result was achieved by liquidation. As many as 71.43% of respondents indicated that this solution could not be used in a systemic crisis at all.

Figure 9.

Decomposition of the resolution authorities' answers to the question of whether the enumerated tools are effective during a systemic crisis



Source: own work based on the questionnaire among resolution authorities.

The authorities that positively assessed the bank's takeover, pointed out the fact that there will always be some entities willing to buy the bank. According to the authorities, this is a good opportunity for stable banks to expand in the market at a potentially lower price (the taken over entity is usually priced lower than a healthy institution). In addition, the sale of the bank is a straightforward way to solve a problem, given that the buyer delivers capital to the failing institution, which provides funds for further operations. Another authority also indicated that

the bank takeover could be seen as the best way to solve crises because it causes the least distraction for both the ailing bank and the whole market. At the same time, it allows to limit the use of resolution funds. However, some authorities noticed that due to the high concentration in the banking sector it is not possible for them to use this tool. The domestic banking sector is dominated by several large banks which, in the case of their own problems, will not be able to take over their competitor (usually of a similar size in terms of assets).

The resolution authorities, when asked to identify the biggest barriers to the use of takeovers / mergers during a systemic crisis, emphasized mainly the difficulty in finding an entity that would be able to take over the problem bank. According to the authorities, such an institution should have the experience and the necessary resources to take over the entity. This entity should also come from the financial industry (preferably from the banking sector) in order to have adequate knowledge and experience in running the banking business. If the resolution authorities find different buyers for different parts of the bank, then it can be difficult to separate the various areas of the bank's business that would be taken over by various parties. Typically, the internal structures of banks are quite complex, and the departments are dependent on each other. This makes it difficult to conduct a transaction. Another troublesome issue may be finding the right price, particularly problematic may be the determination of the pool and the price of toxic assets. The resolution authorities also noted that throughout the process of determining the details of a transaction, there may be a number of contentious issues (mainly raised by the owners) that will cause resistance to the rapid completion of the deal. This, in turn, will prolong the whole process and contribute to the exacerbation of the crisis. In addition, the resolution authorities pointed out potential problems with compliance with the antitrust framework. Additionally, a bank takeover may not be clear to customers who will in any way try to withdraw their funds from the problem bank.

The assessment of the bridge bank as a resolution tool in the context of a systemic crisis was highly positive. The resolution authorities pointed out that this tool ensures the continuation of the bank's critical functions. In particular, it is important that establishing the bridge bank ensures the provision of all products and services that are relevant to the local community or the economy as a whole (depending on the scale of the bank's operations). In the opinion of the resolution authorities, no viable opportunity to find a buyer for a problematic institution and the risk of exacerbating a crisis using bail-in, results in a situation where the creation of a bridge institution remains the only viable way to ensure the continuity of the critical functions of the bank. This allows for the subsequent takeover of the bank by another entity in the future. The resolution authorities also indicated that a positive aspect of using this tool is that only the most critical business areas of the problem bank are transferred to the temporary entity (to maintain their continuity). Meanwhile, the remaining (less essential) assets

of the bank are liquidated. The acquisition of only a selected group of assets of a smaller size than the whole bank seems to be more feasible to implement than the purchase of the entire institution. This also gives other banks the chance to acquire certain assets of the bank being taken over that will be more suitable to their needs and, thus, reduces the risk of the transaction.

However, the resolution authorities enumerated many potential barriers that a bridge bank may face. The most crucial issue seems to be the provision of adequate funding for the new entity, both in terms of adequate capital and liquidity (especially at the start of its functioning). Obtaining access to the current liquidity (other than the central bank facilities and resolution fund) may turn out to be extremely difficult. This problem is related to the lack of trust among other market participants on the financial markets, as a bridge institution may be perceived as the successor of the failing bank (mainly of its problems). This is a kind of stigma effect that must be dealt with by an entity associated with an already increased risk. The resolution authorities also pointed out that a problem in the creation of a bridge institution could be the transfer of relevant assets – in the context of a systemic crisis it may be difficult to separate healthy and toxic assets and to evaluate them properly. The authorities also stressed that setting up a bridge institution as a separate entity could be a time-consuming task. Another important obstacle may be the difficulty in acquiring appropriately experienced staff who will lead the new institution. A long-term problem may also be the low interest of other market participants to take over the bridging institution, particularly in small markets.

The next resolution tool which was assessed highly by the resolution authorities was bad bank. All the resolution authorities indicated that it is possible to implement it effectively during the systemic crisis. The most important argument for them is that the bad bank does not create contagion and reduces the problematic bank's demand for quickly available funding to cover the losses generated by toxic assets. The resolution agencies indicated that in principle it is always possible to create a bad bank due to the fact that it can be a self-employed instrument as well as a complement to a takeover or bridge bank. In addition, it seems that the bad bank may also be a good part of a business reorganization plan that a bank needs to draw upon using the bail-in tool. According to the resolution authorities, bad bank may also function as a bridge institution in the sense of being able to postpone the sale of bank assets. Toxic assets can thus be taken over by the bad bank, managed there up to the moment of an improvement of the banking sector's standing, and then sold (often profitably) to those banks that would be interested in acquiring the selected asset classes. This would allow for the more sustainable development of their businesses.

The barriers that accompany the implementation of the bad bank as the resolution tool indicated by the resolution authorities were similar to those that were enumerated for the bridge bank. Firstly, the authorities highlighted the potential

funding problems of the new institution, particularly to cover the losses generated by the transferred toxic assets. The resolution authorities also emphasized that the selection and proper valuation of assets that could be transferred to the bad banks could be a problem. In their opinion, there is also a high risk that, in the face of the forced transfer of a portion of assets, the existing owners (the owners of the problematic bank) may contest the profits obtained from the management or the liquidation of toxic assets by the bad bank (claiming that they were managed less efficiently than they could have been in the original institution). The time needed to create a new entity could also be a problem for the efficient use of bad bank. One resolution agency questioned whether the implementation of only bad bank could be a sufficient way to resolve the banking crisis. In its opinion, it should be implemented together with other tools.

The bail-in was slightly less well assessed by the resolution authorities. It could be effectively implemented in times of systemic crisis in the opinion of 66.67% of respondents. The authorities indicated that the implementation of this instrument has currently a strong legal basis, but the factor determining the success of the bail-in application is the introduction of the obligation for the banks to fulfill the mandatory MREL requirement. From an operational point of view, bail-in is the easiest tool to implement because it only requires the administrative decision of the authority about the debt redemption or conversion (other tools require, for example, finding a buyer, organizing a transaction or creating a separate institution). Bail-in opponents stressed the high potential of contagion not only among banks, but also across the economy due to the wide range of buyers and essential stock of bank debt securities. The risk is also that in some countries banks are financed mainly through capital and deposits. In this way, the use of the bail-in tool may involve the need to write off some of the deposits (above the guarantee level), which in turn can trigger a run that can easily spread to other banks.

When assessing the barriers to the implementation of the bail-in, the resolution authorities stressed once again the high probability of initiating a domino effect (infecting not only other banking sector entities, but also other segments of the financial system). Particularly important in this regard may be the reaction of the bank bondholders. Panic triggered in the bond market is, in the opinion of the authorities, particularly important in spreading the crisis to further entities. The channel of contagion here is the paralysis of the main markets where large banks are financed (small banks usually base their funding on deposits and rarely have access to debt markets). It is also worth pointing out that the bail-in tool may make the bank's crisis directly perceptible by the retail customers of the bank, if they own a substantial portion of their debt securities and who are subject to the losses (resulting from for example bail-in). So far this situation has been relatively less frequent. The resolution authorities also emphasized that after the implementation of the bail-in, the bank may experience difficulties in the

access to its existing funding sources because of the reluctance of other market participants to enter into transactions with a given bank as a high-risk institution. The last but not least aspect is valuation – the proper determination of the bank's losses and the bank's needs for recapitalization. It is also crucial to identify which of the bank's liabilities (and possibly in what proportions) will participate in the coverage of the bank's losses. These issues are of great importance in terms of the 'no creditor worse off' rule, according to which none of the creditors could suffer higher losses than if they had not implemented the bail-in tool. It seems that issues related to the valuation and determination of liabilities subject to write down or conversion are particularly exposed to legal risk. There are already known examples of legal processes against authorities that decided to write off or convert the bank's obligations (e.g. Cyprus and Spain).

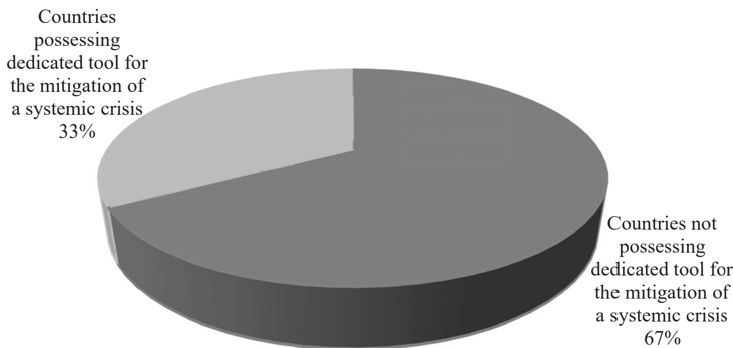
The resolution authorities indicated the low usefulness of liquidation as a tool for solving the problems faced by banks during a systemic crisis. The authorities stressed that it would be the right tool only for small banks whose services could quickly be replaced by other banks. The biggest disadvantage of liquidation is the discontinuation of the critical functions of the bank. They may refer not only to the role that the bank performs for the economy (in the sense of servicing accounts, deposits and lending) but also for other banks (some banks are important players in the interbank market) or in the broadly defined financial markets (some banks have many transactions with other entities and their collapse may impede the correct functioning of the financial markets; and some banks are market makers, and their problems could end up in the cessation of their functioning). Due to the numerous links between banks, the rest of the financial system and the real economy, the liquidation of a bank can create systemic risk. For this reason, the use of normal insolvency proceedings should be assessed as inappropriate. It acts as a factor driving the crisis rather than a way to resolve it. In addition, the authorities stressed the fact that a bank liquidation often causes panic among creditors of banks, both insolvent and solvent. This, in turn, jeopardizes the stability of the entire sector and requires a credible resolution strategy by the authorities, which is definitely not the liquidation of further institutions. Some authorities have also noted that due to the high concentration of the banking sector, which is dominated by several entities, liquidation is a completely unacceptable solution.

The resolution authorities, asked to enumerate the greatest barriers to the implementation of liquidation, indicated a wide variety of threats. An obstacle may be the impact of the bank liquidation on both the stakeholders and the real economy, while another stumbling block may be the valuation. Any misconduct in the valuation of assets and liabilities, and subsequent bankruptcy mismanagement, can be used by the shareholders and creditors to legally challenge the actions of the resolution authority or supervisor. Taking into account that such processes are usually quite long-lasting, this will contribute to the further loss of assets' value and increase the cost of the liquidation of the bank. With regard to the real

economy, stopping the delivery of the critical functions by the bank can have the effect of contagion, which should be a factor excluding the liquidation of the bank.

The analysis of the results of the survey indicates that during the implementation of the resolution instruments the resolution authorities can face many barriers, which translate into the low efficiency of the tools during a systemic crisis. However, the resolution authorities questioned whether they have alternative solutions (in addition to the BRRD resolution tools) in the event of a systemic crisis (capable of effectively solving the problems of banks in a systemic crisis situation) most frequently pointed out the lack of such dedicated tools or the necessity to use government banking stabilization tools.

Figure 10.
Dedicated anti systemic crisis tools

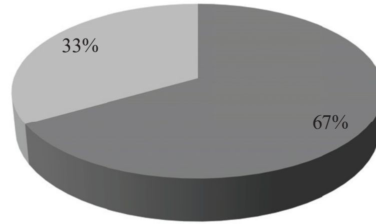


Source: own work based on the questionnaire among resolution authorities.

As indicated by some resolution authorities, the ultimate solution (after using all other available means and demonstrating their ineffectiveness) may be to ask the government to recapitalize the bank or to temporarily nationalize it. Such solutions are only available if there is a serious threat to the stability of the financial system.

For that reason, while most resolution authorities declared that the implementation of the resolution tools is financed by private means, all acknowledged that they allow the possibility of using public funds.

Figure 11.
Sources of the potential funding of resolution during a systemic crisis



■ Only private sources ■ Both private and public sources

Source: own work based on the questionnaire among resolution authorities.

The possibility of using public funds to solve a systemic crisis is justified by the low effectiveness of the resolution tools and the numerous barriers to their implementation.

Conclusions

The results of the survey show that the resolution authorities, when elaborating the bank's crisis management plans, take into account a wide range of factors that can contribute to the crisis and the different variants of the difficulties that can occur in a given bank. This should be reflected in the various crisis scenarios adopted for the resolution plans. One scenario may also be the outbreak of systemic crises. While the resolution authorities recognize the importance, implications for the banks, and the constraints to solve banking sector problems in the event of a systemic crisis, this is rarely reflected in the resolution plans. In other words, while the resolution authorities acknowledge the importance of a systemic crisis for the effective implementation of the resolution tools, they rarely take action that could reduce the barriers that result from it. The authorities' answers confirm the hypothesis that the European resolution regime is not prepared for a severe turmoil in the banking sector, mainly due to the fact that the procedures focus on solving isolated cases of an individual bank's crisis.

The resolution authorities stated that, from the point of view of mitigating the banking crisis, the key for banks is to maintain their liquidity, and when choosing the resolution tool the continuity of the bank's functions is of the utmost importance. At the same time, quantitative analyses indicate that the resolution tools are better at solving capital problems than liquidity ones. This reveals the inappropriateness of the resolution framework, especially in cases of strong turbulence on the banking market.

The evaluation of the effectiveness of the resolution tools in a systemic crises by the resolution authorities showed that the most effective resolution tool is bad bank, while bank liquidation was rated as the least appropriate. The resolution authorities also identified many barriers that may limit the ability to implement individual resolution tools and possibly translate into lower efficacy. Nevertheless, the subjective judgment of the resolution authorities gave a better picture of the effectiveness of the resolution tools than one that could be drawn on the basis of quantitative research.

It is worth concluding that although the authorities perceive a real risk in the possibility of a systemic crisis (with a view to resolving the crisis using the currently foreseen European toolkit), they assess the EU resolution toolkit quite optimistically. Moreover, they do not have any other tools to overcome the imperfection of the resolution tools. The only 'emergency' solution is for the authorities to refer to government support instruments for banks in accordance with the rules of state aid in force in the European Union. This process, however, is currently characterized by rather stringent requirements and the assessment of the potential aid seems to be quite time-consuming.

Therefore, in order to better prepare for a possible systemic crisis, it is recommended to further develop reliable resolution funds and fiscal backstops for them to safeguard the means for effective crisis management.

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Resolution tools in the opinion of EU resolution authorities

Summary

After the banking crisis, the European Union (EU) introduced a framework for the restructuring and orderly liquidation of credit institutions. The overarching goal of the new rules is to manage severe banking crisis more efficiently. One of the main pillars of the European bank resolution regime are the powers of the resolution authorities to use resolution tools (sale of business, bridge bank, bad bank and bail-in). However, the question arises whether the implemented toolkit will be sufficient to effectively contain systemic banking crisis. The literature regarding empirical research on the effectiveness of the BRRD tools provides ambiguous conclusions. Therefore, the newly established resolution authorities in the EU were asked to express their opinion about their readiness to combat systemic crisis and the usefulness of the accessible toolkit. The evaluation of the effectiveness of the resolution tools in a systemic crises by the resolution authorities showed that the most effective resolution tool seems to be the bad bank, while bank liquidation was rated as the least appropriate. Nevertheless, the resolution authorities also identified many barriers for all resolution tools that may limit the ability of their implementation and possibly translate into the lower effectiveness of the resolution framework.

Key words: systemic crisis, bank resolution, resolution tools, sale of bank business, mergers and takeovers in crisis, bail-in, bad bank, bridge bank