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**Competition, Resilience, and Stability –
Implications for Institutional Protection Schemes and Systemic
Risk in the European Banking Union**

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Competition, Resilience, and Stability – Implications for Institutional Protection Schemes and Systemic Risk in the European Banking Union

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The finalization of the European Banking Union (EBU) requires the completion of the third pillar, the system of depositor protection. However, whereas the two first pillars, while setting common standards, allow for elements of decentralization and institutional diversity, some authors claim that the third pillar is only established with a single and joint deposit guarantee scheme (DSG) for all countries in the Monetary Union. Limits to joint liability, or alternative concepts like the existing institutional protection schemes (IPS) in some member states, are seen as imperfections that can only be temporarily accepted for political reasons. According to this view, such elements of compromise and differentiation should be overcome.

In our paper, we argue that neither the DGS nor the IPS is always efficient. Choosing an IPS is a response to a special way to organize banking business. It contains no element of regulatory arbitrage, as it represents a cost-efficient mean to protect depositors in decentralized banking networks marked by a larger number of regional banks and by a business model with a strong focus on long-term client relationships. Making decentralized banking and relationship banking costlier through discriminating regulations (like the non-recognition of IPS) would thus have a negative impact on the common market, as it distorts the competition between different organizational concepts of banking.

Keywords: European Banking Union, banking industry, regulation, systems competition

JEL-Codes: G21, G28, L22, L51

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Executive Summary

The finalization of the European Banking Union (EBU) requires the completion of the third pillar, the system of depositor protection. However, whereas the two first pillars, while setting common standards, allow for elements of decentralization and institutional diversity, some authors claim that the third pillar is only established with a single and joint deposit guarantee scheme (DSG) for all countries in the Monetary Union. Limits to joint liability, or alternative concepts like the existing institutional protection schemes (IPS) in some member states, are seen as imperfections that can only be temporarily accepted for political reasons. According to this view, such elements of compromise and differentiation should be overcome.

With regard to the non-acceptance of IPS, this position hinges on two questions:

- Does the recognition of IPS as system of depositor protection endanger systemic stability, and in this sense violates the core objective of the EU's regulatory policy on financial markets?
- Do the banks participating in such a recognized IPS enjoy an unfair profit from regulatory arbitrage, which would conflict with the principles of the common European market?

In our paper, we argue that neither the DGS nor the IPS is always efficient. Choosing an IPS is a response to a special way to organize banking business. It contains no element of regulatory arbitrage, as it represents a cost-efficient mean to protect depositors in decentralized banking

networks marked by a larger number of regional banks and by a business model with a strong focus on long-term client relationships. Making decentralized banking and relationship banking costlier through discriminating regulations (like the non-recognition of IPS) would thus have a negative impact on the common market, as it distorts the competition between different organizational concepts of banking.

To understand the effect of IPS on systemic stability, the concept must be understood as one of the organizational building blocks of decentralized banking networks, the so-called “Verbünde”. Furthermore, we have to take into account that systemic risk develops along different dimensions. The most commonly known are described by the catchwords “too-big-to-fail”, and “too-connected-to-fail”, i.e., size and contagion. We complement these with the degree of homogeneity of the business models and the level of centralization of decision making. Both do also have an impact on systemic stability, as they strongly influence the diversification of risk in a banking system. We compare the eight largest countries of the Eurozone along these four dimensions of systemic risk.

Concerning size, critics of decentralized banking networks often highlight the fact that these networks also contain rather large, systemically dangerous banks. We argue that this criterion is flawed. The right question is rather if these special decentralized structures make it possible that a larger section of the banking activities takes place in institutions that pose no systemic risk to the stability of the financial and economic system. The data shows that this is the case. The larger banks within the networks fulfil several tasks where scale and scope are needed, and thereby these networks gain a level of economic relevance that positively distinguishes them from grass-root financial institutions of self-help in other countries. We observe a strong process of concentration in the banking markets in the European Monetary Union since 2009 and, in this sense, an increase in systemic risk, but the level and speed of concentration tends to be smaller in countries with strong decentralized banking networks, i.e., Austria and Germany. The larger number of banks in these countries, and the relatively larger share of small banks, is primarily a positive contribution to both competition and systemic stability. Both economies are also not “overbanked”, although the number of independent banking institutions is necessarily bigger in a more decentralized banking system with lower systemic risk. The overall size of the banking sector, measured as total assets relative to GDP is, with 229% in Germany or 300% in Austria, even smaller than in, e.g., in Spain (343%) or France (370%).

Banking systems with a greater number of smaller and regional banks should show a higher proportion of interbank claims on their banks’ balance sheets, as large banks can internalize the liquidity equalization within their organization, whereas smaller and regional banks must draw on the interbank lending market. The respective data clearly shows a higher proportion of interbank claims on the balance sheets of banks in Austria and Germany. This proportion has strongly decreased in the eight large Euro-countries since 2008, since the ECB stepped in as a kind of

permanent lender of resort to the banking industry. However, the global financial crises showed in a striking way that contagion follows many different paths besides straightforward interbank claims, and that the culmination might have disastrous effects on systemic stability. Thereby, it also confirmed results from earlier scientific studies that interbank lending is not an adequate measure for the degree of potential contagion. As there is no aggregate measure for the threat of contagion, we deduct the perceived level of connectedness from market data. Based on Bales (2022) and Bales/Burghof (2022), we draw a systemic risk matrix for seven of our eight large Euro-countries. The matrix illustrates the level of connectedness of risk amongst the large banks of the respective country, and the correlation of the banking risk with the respective sovereign risk. With regard to both criteria, both Germany and Austria perform well compared to, in particular, France, Italy, and Spain. The introduction of the SSM in 2014 seems to have reduced both dimensions of contagion, unluckily mainly in the countries that already represented a lower level of contagion.

Diversification does not only play an important role in risk reduction for individual portfolios. Understood in a broader sense, a larger diversity of banking institutions reduces the probability that a banking system fails due to a too homogenous risk structure. Certainly, in a more concentrated banking system a few wrong decisions of the top management of large, systemic institutions can destabilize the banking system. However, systemic stability also depends on the diversity of legal form, of the ensuing business objectives, and of the respective business models, as a banking system can also be destabilized if many smaller banks align their risk portfolio and might consequently fail simultaneously. Based on data from Gischer/Ilchmann (2018), we show that the Euro-countries with large decentralized banking networks (Austria, Germany) focus on well diversified retail banking concepts, whereas the balance sheets of the banks in other Euro-countries are dominated by investment banking. For the German banking market, we can also demonstrate the smoothing effect of decentralized decision making on the results of decentralized banking networks in contrast to centralized banking organizations.

Thus, a significant economic role of decentralized banking networks can help to reduce systemic risk along its different dimensions. As an IPS is an efficient instrument to implement depositor protection in such a banking model, a non-recognition of IPS as depositor protection scheme would weaken decentralized banking networks. Nonetheless, several authors recently criticized the recognition of IPS, and even demanded that either the network-specific protection schemes or even the whole networks should be treated as a systemically relevant banking groups and be regulated accordingly. The second step would even destroy the substance of decentralized banking with its positive systemic implications, as it would require the installment of a central authority over the network to impose the regulatory demands on the group. Nonetheless, the same authors do generally approve the value of decentralized banking. In this sense, they show

a Janus-faced policy approach that seems to be a specific attribute of the central institutions of the European Union.

After a complex selection process, in the year 2000 the European Parliament proclaimed a motto for the European Union that seems to fit closely to our discussion: “united in diversity”. However, on the webpage of the European Union, the European commission provides a special interpretation of this motto: the motto signified “how Europeans have come together, in the form of the EU, to work for peace and prosperity, while at the same time being enriched by the continent’s many different cultures, traditions and languages.” This interpretation would also allow the creation of a highly homogeneous, centralized European “Superstate” the motto as such seems to exclude.

The crucial shortcoming of the European commission’s interpretation is that it negates much of the value of diversity. The value of diversity is manifold and not limited to the cultural area. Our paper deals with value of diversity in the design of financial institutions. We follow Reinhard Schmidt that “[p]reserving diversity in the financial sector should have a high political priority on the national, European and global level. Its long-term benefits probably outweigh by far the short-term disadvantages that too much diversity may seem to have.” Our paper provides arguments supporting this statement with regard to decentralized banking networks that protect depositors through an IPS.

Greater homogeneity and a higher market concentration promise easy economies of scale from, e.g., lower complexity and lower transaction costs. However, economic institutions consist of a combination of several elements. Some of these elements are complementary to each other, and some might even be essential. In the case of decentralized banking networks, the IPS would be such an element. A regulator who successively pulls some elements from such a construction plays a kind of Jenga game. If the Jenga tower survives, the regulator can state that he was right, as the element was not essential, and some short-term advantages might be realized. If it breaks down, he could argue that it was doomed anyway. In both cases he denies responsibility for negative impact of his action. In fact, playing this game in financial regulation destroys a valuable dimension of diversity in the design of financial institutions, and it destroys the market process of discovery of the optimal design of banking institutions. In both respect, banking markets lose both stability and efficiency.

1. Introduction

The European Banking Union, initiated as a response to the European Sovereign Debt Crisis, has multiple impacts on European banking markets and the European economy. Its foremost goal is to enhance the stability of the financial sector, by relaxing the connection between sovereign debt stability and stability of the banks. As such, it serves the overarching objective of the European Union to create a genuine economic and monetary union. The global financial crises and the ensuing state debt crisis demonstrated how systemic instability in the financial sector can endanger this essential European project. Through the implementation of a single rulebook, the European Union intends to create common standards for the safety level in the participating member states, mainly those that introduced the Euro as common currency. Thus, it can help to avoid a respective race to the bottom and protects the member states from a spillover of systemic risk across national borders within the Union.

As a mayor project within the European Union, the European Banking Union is embedded into the Union's overall activities, in particular the creation and preservation of the European common market, and the related fields of the EU's competition policies. It has also to be seen against the background of the actual debates on the further development of the European Union, in particular with regard to the degree of centralization within the Union. In this respect, the extreme counter positions are on the one hand a strict regard to the mandates given to the European institutions and the – in this sense constitutional but fragile – principle of subsidiary, and on the other hand the centralized European "Superstate", crisis-born and respectively improvisational, whose representatives can accordingly decide with a great degree of freedom about its agenda.

The European Banking Union consists of several components, the so-called pillars. These are (i) stronger and unified requirements for the prudential regulation of banks and other financial institutions, (ii) a single set of rules for the management of failing banks with the objective to remove such institutions from the market, and (iii) a dependable and credible protection of depositors. The three pillars represent the inherent conflict in the regulatory management of the systemic risk of financial institutions, i.e., providing a reliable safety net for investors without obliterating the benevolent forces of competition and market control. Any respective institutional setting of the Banking Union therefore represents a compromise with certain strengths and drawbacks. Or, to put it straightforward, there is no "perfect" Banking Union.

This also holds with regard to the degree of centralization. The national financial and economic systems within the European Union differ substantially. An excessive degree of uniformity would create a Banking Union that is not fitting to the diverse needs of the member states and thus would be highly inefficient. The proponents of an excessive centralization argue that the differences between the countries' economic systems within the European Monetary Union are only temporary, and that the European policy maker should abolish them as soon as possible. From this perspective, the Banking Union contains a hidden agenda as an instrument for further centralization and leveling of differences between the member states. Behind this objective stands the naïve idea that size and homogeneity increase efficiency, as they reduce short-term transaction costs. This view disregards the negative effects of such a development on competition and on the creativity in the design of institutions and business models. From a historical perspective, it disavows the essential European experience that a great institutional diversity – in the long run – is an important succor for stability and efficiency.

It is often stated that the European Banking Union remains incomplete with regard to the third pillar, the system of depositor protection, whereas the two other pillars are already in place. For depositor protection, the maximum level of centralization is envisaged, which is a single and joint deposit insurance for all countries in the Monetary Union. Limits to joint liability, or even alternative concepts like the existing institutional protection schemes in some member states, are seen as imperfections that can be temporarily accepted for political reasons. To complete the European Banking Union, such elements of compromise and differentiation should be overcome.

This view is erroneous with regard to all three pillars: The first pillar, prudential regulation, contains elements of decentralization, as the European Central Bank, for good reason, should concentrate its supervisory activities on the systemically important institutions. And with regard to the second pillar: the crises of the Italian bank Monte dei Paschi di Siena in 2016 illustrates that, even after the implementation of the Single Resolution Mechanism, national governments still play an essential role in the management of distressed large, systemic banks. Both pillars contain a menu that allows a more flexible approach than a simple centralization through a single regulatory institution and a rigid single set of rules. Thus, if these pillars are complete while containing such elements of decentralization, choice, and compromise, it is not evident why the completion of the European Banking Union requires a total centralization and homogenization of the system of depositor protection.

Based on these considerations, in the following we analyze the alternative design of depositor protection as institutional protection schemes (IPS), in contrast to a conventional deposit guarantee scheme (DGS), under two different criteria:

- Does the recognition of IPS as system of depositor protection endanger systemic stability?
- Do the banks participating in such a recognized IPS enjoy an unfair profit from regulatory arbitrage?

A positive answer to the first question would bring IPS in conflict with the central goal of the European Banking Union, i.e., providing a sufficient stability of the financial system to protect the creation of the genuine economic and monetary union. If the second proposition holds, the recognition of IPS as depositor protection scheme would violate the principles of the common market. If both statements must be denied, i.e., the recognition of IPS does neither allow regulatory arbitrage nor endanger systemic stability, the IPS can be understood as a valuable element of choice within the third pillar of the European Banking Union. As we will argue, the IPS is an important element in the organization of decentralized banking networks of a hybrid structure: the so-called "Verbünde". This alternative solution to organize banking business enriches the institutional setting of the European banking market, and thus give a positive contribute both to competition and stability. Consequently, we discuss the possible effects of a potential non-recognition of IPS as depositor protection schemes in this context.

Our paper is organized as follows:

In the next section, we turn to the (putative) problem of regulatory arbitrage and examine whether the separation of deposit insurance and institutional protection necessarily generates different costs than the integration of the two tasks into a common system. It is shown that the choice between the aforementioned solutions ultimately depends on the business model of the individual bank, banking group, and banking sector and the expected costs of dealing with financial crises. There is no discernible superiority of either of the two outlined variants.

Section 3 is dedicated to the description of appropriate criteria for the systemic stability of banking sectors. These play a prominent role in assessing which structural factors can influence the potential vulnerability of national banking systems and which measures can be taken in advance to prevent undesirable developments.

Against the background of the previous chapter, we examine the identified systemically relevant characteristics of banking sectors in detail. The existence of institutions that meet the "too big to fail" criterion

represents the greatest risk for the stability of the banking sector, in retrospect on the financial crises of the past, and – with regard to the tremendous process of concentration in the European banking market in Europe – even more so in the future. The larger the market share of these institutions, the less able are depositor protection systems to successfully cope with possible consequences of a banking crisis. Also of considerable importance is the risk of contagion, initially from individual bank failures, to the entire sector. Although interbank links through the many different types of direct and indirect business connections can be identified as a relevant source of danger, today the largest systemic link in Europe is the European Central Bank in its actual role as a “permanent lender of last resort”, conveying much of the intermediation risk. We use the price changes of Credit Default Swaps on large banks and on state debt in seven member states of the European Monetary Union to characterize the threat of contagion within the national banking systems, and the link to the fiscal stability of the respective countries. In the resulting topology of systemic risk, the two countries with a significant share of decentralized banking can be characterized as low risk countries. Finally, we shed light on the strategic diversification of business models and the associated decision-making structures in individual centralized banking institutions or decentralized banking networks, the “Verbünde”. It is not surprising that a pronounced heterogeneity of business strategies and a decentralization of the decision-making procedures can sustainably reduce systemic risks for a banking sector.

In the concluding chapter 5, we summarize our findings and place them in the actual discussion whether the IPS of decentralized banking networks should and can be integrated into a supranational system of depositor protection and banking supervision, or should no longer be recognized as a valid system of depositor protection. In this respect, we react to, and argue against three recent papers that voice positions in favor of non-recognition and the regulatory treatment of decentralized banking networks as single banking institutions. We show that the respective regulatory changes would have significant negative effects on both the stability and efficiency of banking in the European Monetary Union.

2. The regulatory arbitrage argument: two tasks – double costs?

The first and very plain argument against the acceptance of IPS could be seen in the fact that it has to perform a double task: protecting depositors against potential losses and safeguarding the mere existence of the respective bank. Thus, depositor protection through an IPS should, in principle, be more costly than through a DGS. The additional costs of an IPS could be attributed to two different sources. Firstly,

safeguarding the existence of the failing bank might be more costly than just compensating the depositors. And secondly, the fact that failed banks protected by an IPS will, as an institution, always survive the crisis could be seen as a weakness in the system of corporate control that leads to inefficient management behavior even in the going concern. Overall, an IPS would require higher fees and a larger capital buffer. As this additional buffer is not provided, banks protected by an IPS enjoy an unfair competitive advantage.

In practice the treatment of banks in distress does usually not differ very much, independently of the specification of the system of depositor protection. To safeguard valuable client relationships, avoid unnecessary irritations and prevent potential threats to systemic stability from lingering uncertainty, the bank is usually recapitalized and merged on another bank. In this process, the management team of the failing bank loses control and gets supplanted.¹ It is important to note that, in general, relationship-based systems of corporate control are not necessarily less aggressive than systems working with an arm's length distance. However, in some cases, a DGS might decide to just liquidate the bank, an option not available to an IPS. It is, to our best knowledge, an unresolved empirical issue how often this option is actually chosen. However, even in such cases the difference is not as big as it seems, because even in a restructuring through an IPS large business segments of the troubled bank can be closed down.

Another difference with relevance to the cost issue is that the prospective merger in an IPS usually takes place within the respective network, whereas a DGS can address the whole market and sell to the highest bidder. Again, the advantage of this proceeding might not be as big as it seems. Banks within a decentralized banking network linked to an IPS, use many respective network systems jointly and often share some elements of a common corporate identity. All this makes the post-merger integration much easier and cheaper. Consequently, the mere transaction costs of a merger should be comparatively low when staying inside the group. Furthermore, the group members do not like to share the special and often valuable reputation of the group with an outsider. Everything else equal, it should thus be possible and rather probable that group members outbid any external applicant. The result might be different if the external bidder expects to achieve, through the merger, an oligopoly or even local monopoly and anticipates the respective rents in his bid. Such a development would reduce the actual costs of crisis resolution but is nonetheless not in the public interest.

¹ On the relative cost advantages of recapitalization in crisis bank resolution management see most recently Cabral (2022).

Thus, in a static setting, the expected costs of the crisis of an individual bank to the protection system might be somewhat higher for an IPS, as it lacks the valuable options to liquidate or to sell the defaulting bank to any interested acquirer. However, this statement does not hold in a dynamic and consequently more realistic setting. To safeguard valuable client relationships, the clients must be assured that these relationships remain intact and will fulfill their expectations even after the crisis of the bank. A fundamental insight of economic theory, the so-called Folk Theorem, tells us that such non-contractual long-term relationships are stable if and only if the probability that the respective coordination game ends is not too high. Consequently, clients will start to cheat or even abandon the relationship if a bank enters into a crisis and there is a strong increase in the probability that the original relationship cannot be continued. In the case of a DGS, this strong increase in probability is due to the fact that the bank might be liquidated or could be merged on a very different bank. Such an acquirer could have a totally different understanding of long-term financial relationships, or even follow a crude deal banking approach. Consequently, even the banks that, under the crisis management of a DGS, are allowed to continue either independently or within a new merged bank, will nonetheless lose valuable client relationships as the clients cannot foresee the result of the restructuring process. Due to this time inconsistency, the aforementioned valuable options of a DGS to liquidate or sell to the highest bidder might come at a high price.

We see no perspective to actually quantify the expected costs of the crisis resolution under the two regimes discussed in this paper. However, the result of a respective exercise would obviously depend on the specific type of the financial institution. If a bank mainly follows a deal banking concept, it has no valuable long-term relationships to lose. Such banks often follow a very formalized and centralized decision logic. On the other hand, relationship-based banks could lose much of the value if the clients don't trust in the long-term perspective of this relationship. Such banks are usually smaller, close to the clients, and they follow, at least as a group, a decentralized decision logic that leaves ample room for the design of individual long-term relationships. Most of these banks will have a regional focus. Thus, the bank's choice between a DGS and an IPS depends on its business model, and the preference of countries for either a pure DGS or the acceptance of both DGS and IPS mirrors the structure of the different financial systems.

We can draw two main conclusions from these considerations: firstly, neither the DGS nor the IPS are always cost-efficient. Choosing an IPS is a response to a special way to organize banking business. It contains no element of regulatory arbitrage, as it can be seen as cost-efficient mean to protect depositors in

such an environment. On the contrary, it is a component of a special banking model that enriches competition in the European banking market. If some market participants find it difficult to enter into such a banking market, this must be attributed to the efficiency of the competing relationship-based banking model and not to unfair distortions of competition. It is certainly not a valid concept of competition policy to force some market participants to organize themselves in an inefficient way just to allow entrants into the market that could otherwise not succeed.

Secondly, non-recognition of the IPS as depositor protection scheme in the European Banking Union would reduce the efficiency of the relationship-based banking model, as it endangered the stability of long-term client relationships. The respective banking institutions would lose further ground against more centralized approaches that actually also profit from the technological development and the general upsurge of regulatory requirements. To cope with the high fixed costs of both trends, banks become bigger and less able to act as a long-term partner in individualized financial relationships. Making relationship banking even more costly through further discriminating regulations (like the non-recognition of IPS) would thus have a negative impact, as it distorts the competition between different organizational concepts of banking.

In this section we discuss the expected costs of crisis resolution under the two different depositor-protection regimes. However, to understand the role of IPS we have to place this institution within its context as an element within decentralized banking networks with at least some regional banks following the concept of relationship banking (“Verbünde”). We cannot fully predict the consequences if the institutions concerned were forced to replace the IPS with a mere DGS. We argued above that such regulatory change would result in a loss of efficiency. Furthermore, we expect that such banking networks would lose some of their internal coherence. Both developments could endanger the feasibility of such decentralized banking networks within the banking market. Consequently, in the following we take a wider perspective, trying to understand the – positive or negative – contribution of decentralized banking networks to systemic stability.

3. Criteria for systemic stability

The public debate on systemic risk is dominated by two aspects: size and connectedness. Due to both aspects, a respectively significant single bank might be in the position to force state support in the case

of a crisis. An insolvency of this institution could have wide-reaching consequences and might threaten to spread its losses and the ensuing loss of trust into the whole financial system, even across national borders. Thus, the bank is too-big-to-fail, or too-connected-to-fail, and therefore a threat to the stability of the whole system. The state has to pay for costly rescue operations to prevent further damage. However, the existence of such banks also undermines market discipline. These banks have strong incentives for excessive risk-taking, as they don't have to pay the full risk premium for such misbehavior.

Size can easily be measured, whereas connectedness is a more complex concept. In both respects, the question is the reference market that might be endangered by the respective systemically important financial Institutions (SIFIs). E.g., according to the European Banking Authority guidelines there is a small group of global systemically important institutions (G-SII), and a much larger set of other systemically important institutions (O-SII), mainly with regard to European financial market. Thus, the criteria for ECB supervision of "significant" banks are defined on the EU level. The ECB also supervises the three largest banks in each member states, some of which are rather small and not very connected. The ECB states that it directly supervises 111 significant banks in the participating countries that represent 82% of banking assets in these countries.² Thus, the institutions the ECB assesses as significant have a high relative importance. This could either be understood as an outflow of an overcautious extension of ECB supervision, or the number truly represents a European banking system with an extremely high systemic risk, as most of the banking activities within the European Monetary Union are performed through "significant" institutions. For our discussion, we can state that it had a positive impact on systemic stability if a banking system allowed for a larger portion of banking activities to be performed within non-systemic banking institutions.

However, the objectives of EU policies are not as clear-cut as it seems when discussing the negative impact of significant banks on the stability of the financial system. Market integration implies a high level of cross-border activities in banking, and the common market makes it possible for financial institutions to do business in any European country. The concept fosters truly European banks and consequently highly connected and respectively large financial institutions. The dark side of this development is an increase in systemic risk due to size, connectedness, and a higher probability that problems in banking will cross borders. For our purpose, we can state that small, regional banks do not contribute to these dimensions of systemic risk even on a national level, and will certainly not endanger the stability of the banking systems in other participating countries.

² <https://www.bankingsupervision.europa.eu/banking/list/html/index.en.html>, 25.08.2022.

The general debate does not give full acclaim to two other important dimensions of systemic risk: the homogeneity of the business models and the centralization of decision-making. Both aspects deal with the process of risk-taking in banks and its consequences on the overall riskiness of banking organizations and the whole banking system. In this sense, regarding these additional dimensions provides a more dynamic view on risk creation in banking.

If banks followed the same business model, they all shared the same flaws and created similar risk structures. Consequently, in a very homogeneous banking system the systemic risk is high even if the banks are not too big to fail or not highly connected. If something goes systematically wrong, it goes wrong everywhere. One of the success factors of banking regulation should therefore be to avoid setting any incentives that make banks, on a national level, more homogeneous, and in the best case deliberately create free space for very different business models in banking.

To allow for relationship-based business models in banking, it is important to notice that such business models rely on a respective organizational structure. The link can be best explained using the theory of incomplete contracts. Such long-term relationships contain a high level of contractual incompleteness. The outcome of the relationship therefore depends to a great part on the expected behavior of the partners in any kind of future renegotiation. In particular, it requires a high degree of decentralization of decision power on the bank side to make it possible for the banks' managers to fulfill the implicit, i.e., non-contractible (and maybe even not describable) obligations from this relationship. In the centralized banking model, such special relationships with decision-makers within the bank would not be feasible for the great majority of clients.

Another reason why the degree of centralization within the bank or banking groups is important is diversification. Risk managers and regulators often take asset portfolios as given. Consequently, the risk of such portfolios is mainly driven by the correlation of asset returns, and, given a well-diversified portfolio, by the systematic risk of the portfolio. This view does not take into account how portfolios are created. Any corporation is based on the delegation of decision rights. E.g., traders in a bank could either go long or short in a certain bond or stock, or a specific market. Credit managers could either grant risky loans to growth companies or look for business with established companies with lower return and less risk. Losses occur if a decision-maker positions the bank on the wrong side of the market, naturally not knowing at the time the decision is made which side of the market this will be. From this perspective, it's the degree of correlation between "wrong decisions" that drives the risk of the bank's portfolio.

In the following, we assess the effect of decentralized banking networks with IPS (“Verbünde”) on the systemic stability of the banking system according to the four criteria developed above: size, connectedness, homogeneity, and centralization. Thereby we have to keep in mind that the usage of IPS as depositor protection mechanism is an inherent element of such banking groups.

4. “Verbünde” with IPS seen from a systemic risk perspective

4.1 Size: the too-big-to-fail fallacy

Critics of decentralized banking networks often highlight the fact that some of these networks also contain rather large banks that pose a systemic risk. The rationale for the existence of such institutions (“Zentralbanken”) is that they provide services to the clients that cannot be produced by the rather small regional banks (“Primärinstitute”). This concerns mainly international services (e.g., payments, financing, advice and networking) and capital market related services (e.g., issues of financial titles on the capital markets, large and complex capital market investments, complex corporate finance transactions). They also serve as a pool to reallocate liquidity within the network, as some of the regional banks are active in regions with a capital surplus, whereas others meet a strong demand for capital in their region. The naming of the institutions in German language stresses the servicing function of the central institutions, whereas the “primary” business is done by the smaller regional banks. However, even the larger institutions within the networks must develop a successful business model, which cannot be done if they reduce themselves to a small set of activities that are strictly defined through their serving function in the network.

Within the networks, the delineation between the activities of the small regional banks and the larger central institutions, and the overall scope of the business models of the larger banks are always at debate. In the past, some of the large banks within the networks developed ambitious business models and thereby emancipated themselves to a high degree from this specific origin. In some cases, they suffered severe losses in this process and did a heavy damage to the reputation of the respective banking network. Today, the large institutions are subject to the direct supervision of the ECB and in this sense under maximal regulatory scrutiny. However, despite some negative experiences with the larger institutions, some central resources and a bundling of competences are needed if a decentralized banking network wants to provide a comprehensive set of banking services and accomplish the available economies

of scale and scope. Thereby, the decentralized banking networks in Europe gain the respective economic relevance that positively distinguishes them from grass-root financial institutions of self-help.

This aspect is also important with regard to systemic risk. The idea that a modern, capital-intensive economy in a globalized world can do without large, systemically dangerous banks is, at least for the time being, erroneous. To set a respective benchmark for decentralized banking networks, i.e., that they should not contain any systemic institutions, is equivalent to limiting them to a very small scale and scope of business, and respectively a very limited economic relevance. The right question is rather if these special decentralized structures make it possible that a larger section of the banking activities takes place in institutions that pose no systemic risk to the stability of the financial and economic system.

To get some insight into this issue, we compare the banking market structures of the 8 largest member states of the Eurozone, i.e., Germany, France, Italy, Spain, Netherlands, Belgium, Ireland, and Austria. Four of these countries contain decentralized banking networks using an IPS (Austria, Germany, Italy, Spain,)), whereas the other four countries do without (Belgium, France, Ireland, Netherlands). However, Italy and Spain are special cases. In Spain, the Caja Rural Group, a medium sized network of 30 rural savings banks, established an IPS effectively only in 2018, but seemingly had an institution for internal support within the group even before this date. In Italy, the members of a decentralized banking network with IPS are all headquartered in the northern region of South Tyrol/Alto Adige. In this respect, the region follows traditions of the German speaking countries it is historically linked to.³ In both countries, the respective section of the banking industry is rather small and will not influence the overall numbers of the country.

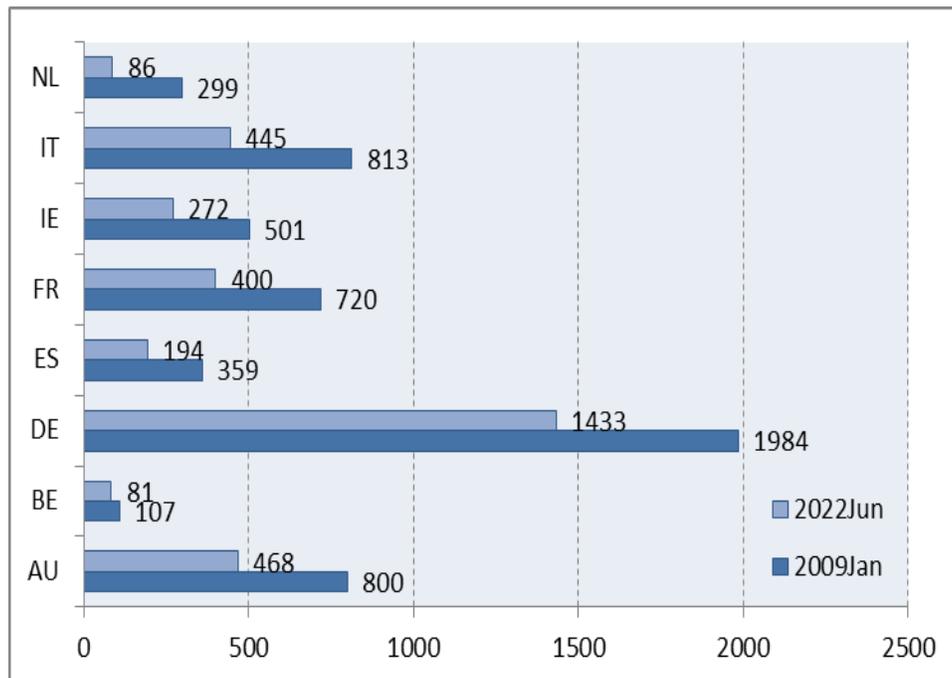
In the following, we present some data on the size structure of the national banking systems of the eight countries mentioned above to illustrate the marked differences. Thereby, we first focus on the number and average size of independent banking institutions. As banking organizations can choose very different levels of integration, the delineation of an independent banking institution is not as clear cut as one could wish. To avoid any disarray, we use data from the ECB.

Figure 1 displays the number of banks in our sample of Eurozone member states. These countries make up for more than 90 percent of all monetary financial institutions (MFI) in the Eurozone. We compare the year 2009 with 2022. In 2009, the eight countries exhibited 5,600 banks. This number has gone down by

³ Maybe not directly linked to the topic of this paper, it is nonetheless an interesting question if the EU should, through the intended non-recognition of IPS, disable a core organizational principle of the largest banking group of this very special Italian province.

more than a third to rather 3,400 institutions in 2022. In the thirteen years since the financial crisis, the countries lost between one quarter (Belgium) and almost three quarters (Netherlands) of their independent banking institutions. From the perspective of both competition and systemic risk, this massive process of concentration of market power and increase in bank size should raise serious concerns. However, to our best knowledge, the European regulator is not interested, or even assesses the development positively as market “consolidation”.

Figure 1: Number of banks in the 8 largest member states of the EMU



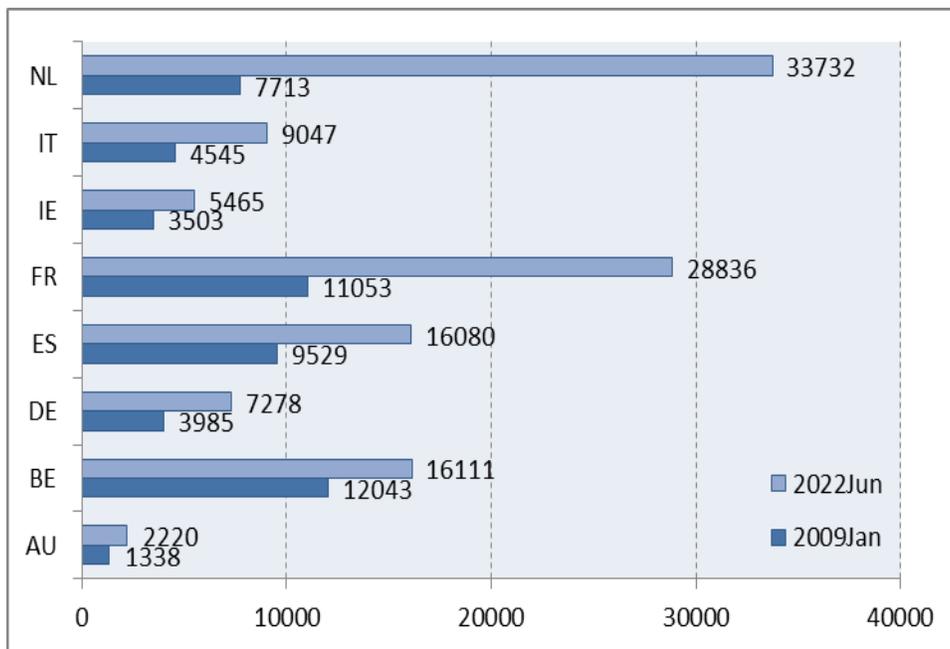
Source: ECB

With regard to the total number of banks, Germany is still outstanding. The proportion of German banks in our sample has even increased, as the relative reduction of the number of banks in Germany was smaller than average. The other extreme represent Belgium and the Netherlands, both with a remarkably low number of independent banking institutions. As many of these banks are subsidiaries of foreign banks, the total number of Belgian and Dutch banks is even smaller, and the market is dominated by a few large players. On the other hand, both countries are remarkably well embedded into the European and the global economy, thus the overall impact of the small number of banking institutions on competition is uncertain. Amongst the smaller countries, Austria and Ireland still contain a comparatively large number of banks, although for very different reasons. Ireland plays a special role for international com-

panies and financial institutions, leaving the retail market to a small number of Irish competitors. Austria represents the model case of a truly decentralized banking system with many competitors.

Comparing the absolute number of banks does not take the different size of the countries into account. However, the structural differences remain even if we take the size of the countries into account. This could be shown if we calculated the number of banks relative to the size of the population or the economy. From the perspective of systemic risk, which is of principal importance for our paper, the ensuing size structure of banks is of interest. In Figure 2 we present the average size of banks in the eight countries, again comparing the numbers from 2022 with the situation in 2009.

Figure 2: Average amount of total assets per bank (millions of Euros)



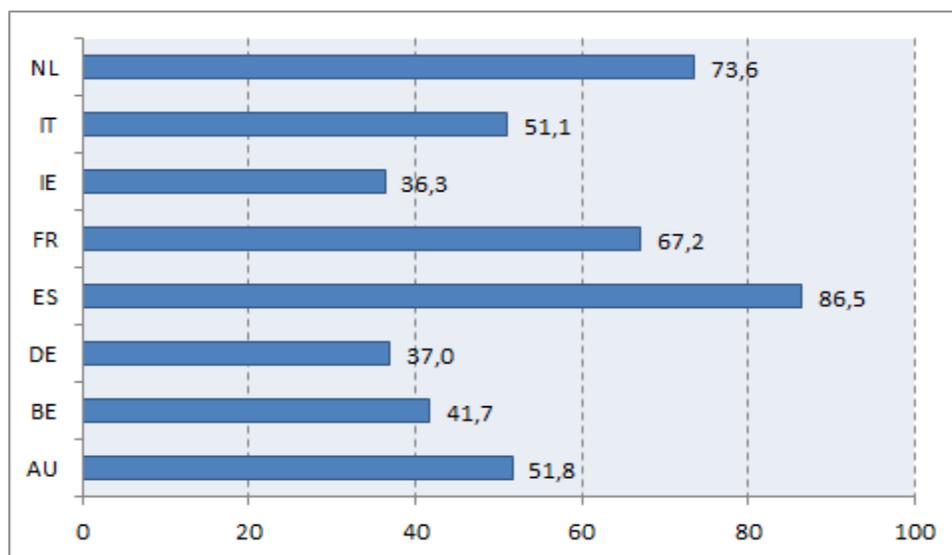
Source: ECB, own calculations

We note that the average size of banks has strongly increased in all countries. However, with regard to size, the European banking system has become even more divers: The largest average size of banks in 2009 (Belgium) was about 9 times larger than the smallest (Austria). Today, the Dutch banks are on average more than 15 times larger than the average Austrian bank. For Germany, as the second country with a large market share of decentralized banking networks, this factor increased from about 3 (again com-

pared to Belgium) to about 4.6 (Netherlands).⁴ Thus, the different models seem to have to become even more distinct. The main driver of this development is, again, the extreme process of concentration in some countries.

With regard to the absolute numbers, the average bank size soared in France from 11 billion Euro to almost 29 billion Euro. In the Netherlands the number more than quadrupled from 7.7 to 33.7 billion Euro. In the Netherlands, and in France almost, banks have become so big that an “average bank” is seen as a threat to systemic stability according to the ECB’s size criteria. In this sense, the exception becomes the rule. In Figure 3, we show the resulting effect on the overall share of systemically important banks (SIBs) in the eight countries. We observe an outstanding role of large, systemic institutions in many of the countries, in particular Spain, Netherlands, and France. The rate is comparably low for Germany and Ireland. In Ireland, the explanation can again be seen in the special (and non-imitable) business model of the Irish financial center.

Figure 3: Share of SIBs (percent of assets incl. NCB) (2022 Mar)



Source: ECB, own calculations

This size structure of the national banking systems in Europe is the result of the political, economic and the banking history of the respective country. Some countries tend to a high degree of centralization, whereas others have been successful with a decentralized system with politically and economically

⁴ The relative difference between Austria and Germany on the one hand and the Belgian banking system on the other hand with regard to average size did, however, decrease somewhat, as the number of banks in Belgium was already very small in 2009.

strong regions. Political structure, economic structure and also the structure of the banking system correspond in this development, which also contains a strife for efficiency under the specific conditions of the respective country. Thus, in a free market economy, banking systems are not just “outdated”. With a similar patronizing stance, some authors call countries like Germany and Austria “overbanked”. However, the banking sector in these countries is not extraordinarily big compared to the size of the economy. The total assets of 229% (Germany) or 300% (Austria) relative to GDP compare well to 343% in Italy, 370% in France, or the much larger numbers in the United Kingdom (423%), Switzerland (525%) and, certainly a special case, Luxemburg (1,386%).⁵ Thus, only the number of banks is bigger. There is no proof that large banks are more efficient. Without any causal implication, we note that a larger number of banks goes along with the existence of decentralized banking networks with well-established IPS. The larger number of banks in these countries, and the relatively larger share of small banks, is primarily a positive contribution to both competition and systemic stability.

Finally, some remarks on Italy are needed. As the banks participating in a decentralized banking network with IPS are mainly active in the Provincia Autonoma di Bolzano/Bozen, the national numbers do not reflect the relevance of this special institution. However, the number of banks in this province per 100,000 inhabitants is, with 10.56, much larger than Italian average (1.20), and in particular bigger than in Lombardy (1.29), the province with the Italian financial center Milan. Critics would say that the province is highly overbanked. In this criticism they are aided by the fact that it is very difficult to draw causal conclusions between such structural issues, efficiency, and economic performance of a region. However, it is worth to mention that, despite its agricultural traditions (and allegedly an inefficiently overbanked financial sector), the Provincia Autonoma di Bolzano/Bozen is, by far, the richest Italian province with regard to GDP per capita. So, there is at least something to lose by regulatory mismanagement if decentralized banking, with a market share of more than 50% in the province,⁶ played an important role for the economic success of this province.

⁵ Vgl. Germany Finance 2021, p. 12. Data for 2019.

⁶ According to the Raiffeisenverband Südtirol, the market share of the Raiffeisenkassen in their province with regard to loans to clients reached 50.42% in 2021 and has been growing constantly over the last years.

4.2 Connectedness: the multi-dimensional monster?

In particular during the global financial crisis, economists and politicians became much aware of the fact that, besides size, also the degree of connectedness determines how strongly the crisis, or even failure, of an important banking institution threatens the stability of the financial system. A frictionless institutional money market is a necessary precondition for the efficient allocation and the cost-effective provision of financial services. Since many years, it is argued in the literature that the resulting mutual (business) dependencies of banks in a more or less closed system could lead to undesirable contagion effects.⁷ However, empirical studies showed that most banks were well-diversified in their interbank lending, which made a spillover of risk along this path only not very probable.⁸ The global financial crises illustrated in a striking way that contagion follows many different paths, and that the culmination might have disastrous effects on systemic stability. Consequently, connectedness became again an important focus for scientist and the regulator.

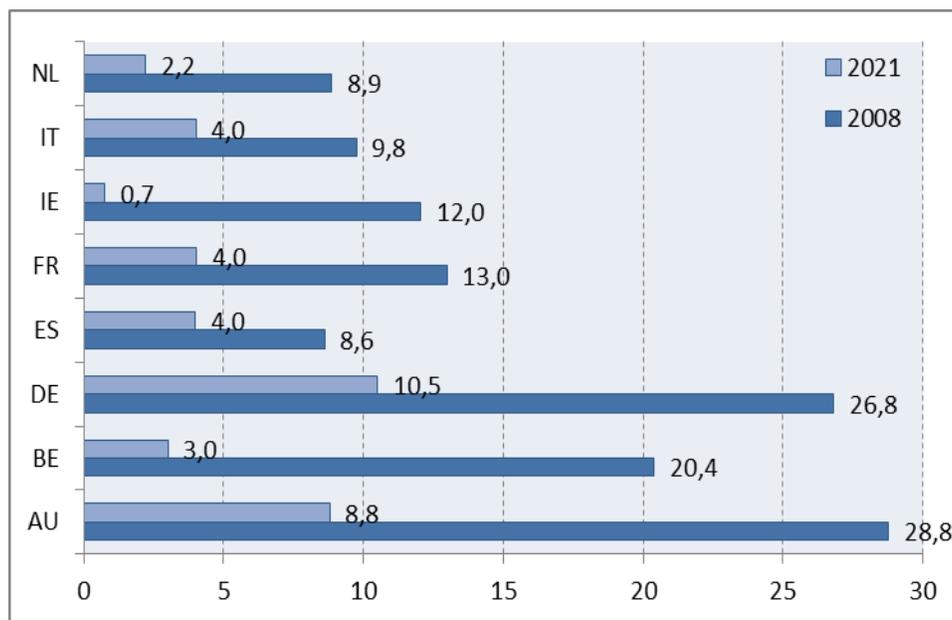
Despite this insight, we first have a look at interbank lending. We expect that banking systems with a greater number of regional banks will typically show a higher proportion of interbank claims. Large national or even European banks can channel liquidity within the bank from regions with capital surplus to regions with capital demand, and they might even choose a geographical structure that leads to high degree of autonomy from outside liquidity. Small and regional banks must refer to interbank lending to do so. However, in a close-knitted system of small banks, like the decentralized banking networks with IPS discussed in this paper, this inter-institutional liquidity balancing mainly happens within the network. The alliances create their own money market and can thus partially insulate themselves from external influences. The long-standing relationships of the co-operation partners reduce information costs as well as the factual liquidity risks, without having to subdue the individual institution to a central authority. In this context, the central institutions within the alliances act only as clearing houses and also represent the contact points to the financial community outside their own network.

⁷ See, e.g., Rochet/Tirole (1996).

⁸ See, e.g., Sheldon/Maurer (1998), Degryse/Ngyuen (2004).

From the data of the ECB (see figure 4), we get two insights: Firstly, for both 2008 and 2021, the share of the interbank claims of banks assets is highest in the two countries with large decentralized regional, but interconnected organizations (Austria, Germany). In this respect, the result is in line with our expectations. However, secondly, the relative importance of interbank lending has greatly decreased. The decrease is most pronounced in Ireland, Belgium and the Netherlands. The other countries also show a rather impressive decrease by between 60% and 70%, which reduces the respective numbers even in Austria and Germany to 8.8% and 10.5% respectively. Thus, if the main driver of connectivity between banks' risk were interbank lending, its relevance was much reduced today.

Figure 4: Interbank dependence (percent of assets)

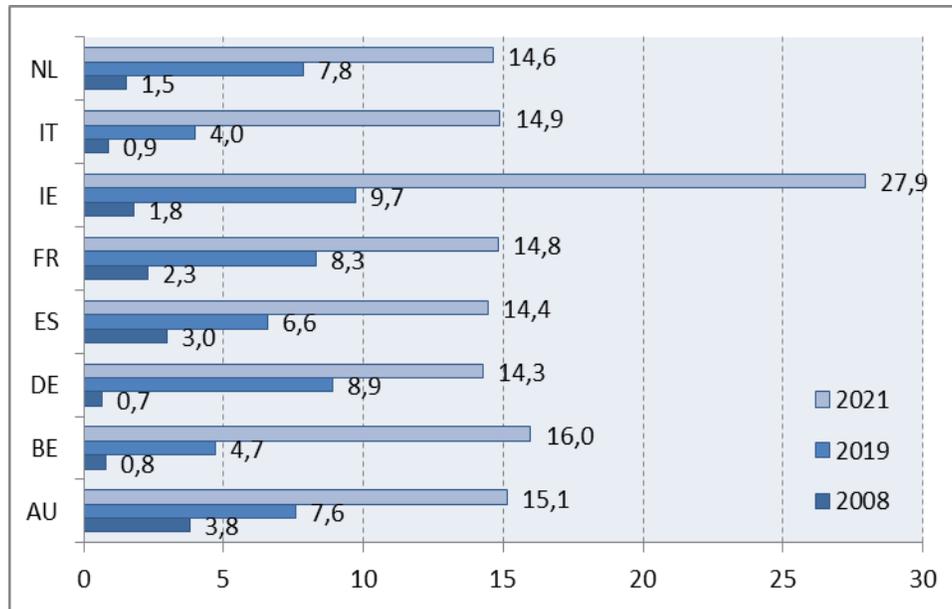


Source: ECB

This seemingly positive development comes at a high price. Unluckily, the main reason is not a reduction in the overall risk of the system, but a transfer of risk on the ECB. As figure 5 below shows, banks invest an increasing part of their wealth into central bank deposits, and the ECB provides most of the liquidity the banks and the economy need. Far beyond its function as a temporary lender of last resort, the ECB acts – on a permanent basis – as central intermediary and consequently bears an ever-increasing and overwhelmingly large portion of the intermedia-

tion risk in Europe. We present the data for 2008, 2018 and 2021 to show how the monetary policy of the ECB in reaction to the Corona crisis led to a further boost in this development. It will be interesting to see if the actual changes in the ECB's monetary policy will reverse this development.

Figure 5: Cash balances and central bank deposits (percent of assets)



Source: ECB

As stated above, the classical interbank loan is not the only, and maybe even not the most important driver of connectivity between the individual risk of the banks. Without any claim for completeness, we like to mention similarities in the portfolio composition, strong changes of market prices due to fire sales, erratically increasing collateral requirement for derivative positions, the multifold effects of rating changes, or possible threats to the liquidity of the short markets. Many of the respective markets are characterized by the dominance of a very small number of global players, which makes them particularly dangerous compared to the well-diversified interbank lending market. The respective data is not as easily available as the amounts of on-balance-sheet interbank claims, and probably cannot be aggregated into a measure for systemic risk. An alternative approach is to deduce the market's view on the systemic risk of the banking sector from market data.

In the literature, such an analysis is usually based on the prices for Credit Default Swaps.⁹ By construction, these so-called CDS spreads represent the credit risk of the respective underlying.¹⁰ Unluckily, in our context, such market data is only available for sovereign debt and a few large banks. On the other hand, these large banks are exactly the institutions that play the most important role in the creation of systemic risk, and we are particularly interested in the impact of systemic risk from the banking sector on public finances. To characterize our set of European countries with regard to overall systemic risk, we look at two dimensions of this risk: Firstly, how closely linked is the credit risk of the large banks, and secondly, how strongly correlated is this risk with the credit risk of the respective country?¹¹ We present our result for a time period before the introduction of the Single Supervisory Mechanism (SSM) of the European Banking Union (January 2009 – October 2014), and for the period after this event until the beginning of the Corona crisis (November 2014 – December 2019),¹² as we observe that the introduction of the SSM had a significant positive effect on systemic risk in our operationalization.

Regarding the riskiness of the banks, we use the Principal Component Analysis (PCA) to identify if there is a strong common driver of credit risk for the large banks in the respective country sample. The reported number, the first principal component, shows how much of the variation of the CDS spreads of the different banks is explained by this common factor, and it is often interpreted in the literature as measure for the systemic risk of a banking system.¹³ For the link between banks and states, we look at the correlation of the changes of the CDS spreads of the respective country and of the (weighted) CDS spreads of the banks in the country for a time horizon of one month.¹⁴

⁹ See, e.g., Trapp/Wewel (2013) using CDS data for a cupola approach on systemic risk in the US and Europe, and in-between these two areas, during the financial crisis of 2007/2008.

¹⁰ Technically, the CDS spreads is the quarterly premium the risk seller has to pay to the risk buyer.

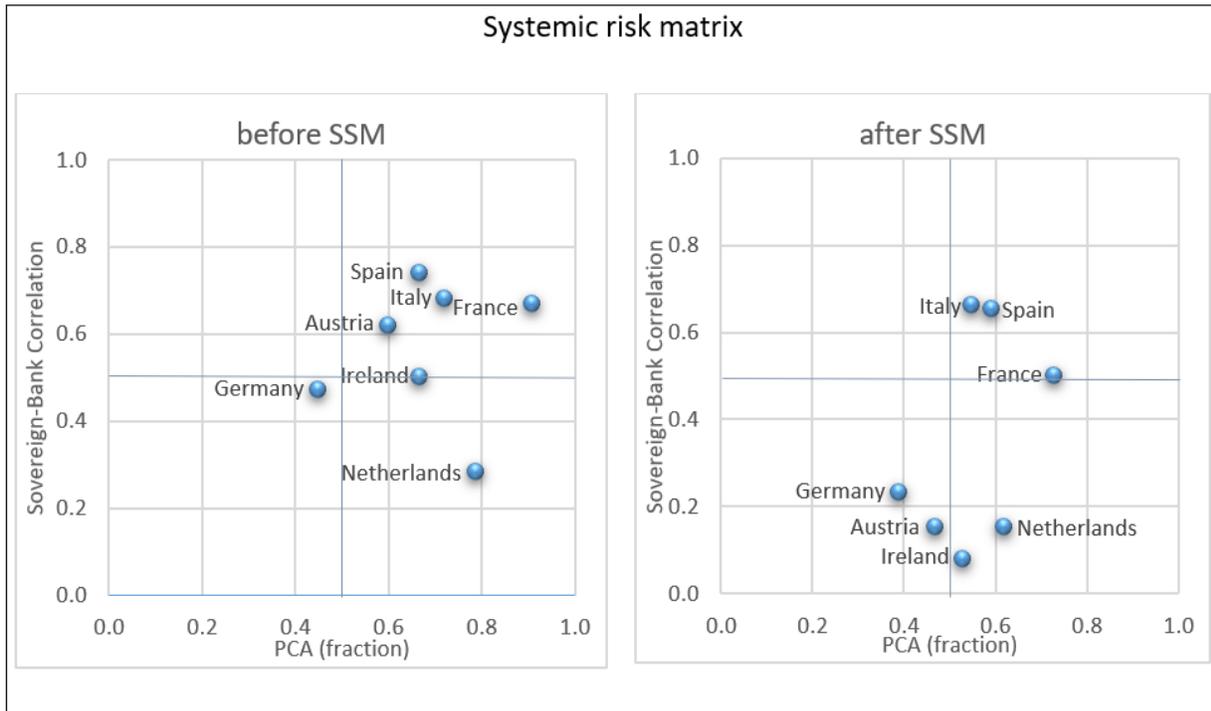
¹¹ In the following we build on Bales (2022) and Bales/Burghof (2021). For a more detailed analysis, and for the cross-country spillover effects not regarded in this text, see these papers.

¹² Thus, we do not regard the special situation provoked by the pandemic, which led to certain rebound of systemic risk.

¹³ See, e.g., Ballester/Casu/González-Urteaga (2016).

¹⁴ Unluckily, due to data limitations about available CDS spreads of banks, we cannot include Belgium into our analysis.

Figure 6: Systemic risk and the sovereign-bank nexus



Source: own calculation based on the analysis in Bales (2022) and Bales/Burghof (2021)

Our result shows that the introduction of the SSM (or simply the turn to a historical time period with lower perceived risk) is reflected in a clear and, with regard to our measures, even strictly dominant reduction of systemic risk with regard to both dimensions. Structurally, the situation has not changed and has become even more pronounced. Italy, Spain and France show a high systemic risk within the banking system, and also a high correlation with the credit risk of the respective states. Ireland and Netherlands present a similarly high systemic risk, whereas the link to the credit risk of the state is rather weak. This might be due to a successful and credible regulatory entrenchment of banking risks, and/or because of the increasingly strong fiscal positions of these countries. Germany and Austria represent the lowest systemic risk, whereas the correlation with the state credit risk is similar to the second group (Ireland and the Netherlands). For both last-mentioned groups, the link between the credit risk of the large banks and sovereign credit risk has become much weaker after the introduction of the SSM, whereas the advances in the first group (Italy, Spain and France) are rather limited.

Thus, according to the market data on CDS spreads, a potential for a massive banking crisis that could endanger the fiscal stability exists mainly in the three countries of the first group. This risk has decreased after 2014, although seemingly less than in the other countries. Furthermore, we know that systemic risk does not stop at borders. Nonetheless, it is important for our discussion to notice that the existence of decentralized banking networks with small and medium-sized regional banks, and a relevant market share of these networks, goes along with a relatively low systemic risk, whereas more concentrated banking systems without a relevant role for such co-operative concepts generate a stronger link between the credit risk of the large banks.

4.3 The pleasures of diversification: business models and decision-making structures

In the preceding chapters, we mainly deal with the systemic risk caused by large banks, either due to their mere size or their connectedness. However, systemic risk is not limited to large banks. For both, large and small banks, the degree of systemic risk is linked to the level of diversification within the respective financial system. In this context, the concept of diversification must be understood in a rather broad sense. The classical capital market theory mainly deals with diversification as a dimension of the individual choice of an investment portfolio. Financial institutions with well diversified asset portfolios certainly represent a lower risk. However, from the perspective of systemic stability, this static and individual view is not relevant, as banks can rapidly change their exposure to risk through respective transactions on the capital market, and, in particular regarding smaller banks, it is not the individual banks' risk that drives overall systemic risk.

However, the basic insights of modern portfolio theory do also hold on a more detached level. The most fundamental type of diversification concerns the different types of banking institutions as such, and their ensuing objectives. The legal form of a bank might be a good predictor for such differences. Listed companies serve to maximize shareholder value. Other, non-listed private companies are expected to act on behalf of the respective owners, who might have a whole set of monetary and non-monetary objectives. Co-operative banks serve their members in providing access to banking services of a special quality and price, and the monetary value of

the share in the bank is of only tertiary importance. The manifold public banks must follow their respective, legally defined objectives, either as market participants competing on par with other banks, or as national or supranational development banks endowed with specific and often highly subsidized tasks.

The objectives of co-operative banks and public banks might also strongly depend on their degree of centralization, as the controlling peers might either be close to the people in the respective region, or represent some supra-regional or even national stakeholders and have to define their objective on a respectively aggregated level. However, if they stayed true to their task, even these kinds of stakeholders should not simply maximize shareholder value. Overall, we observe that the shareholder-value maximizing bank is not the rule within the European Monetary Union. There are several variants, and the relative weight of these variants differs greatly between the European countries even on this fundamental level. If we do not want to obliterate all these different objectives, we must take them into account in the evaluation of the success and performance of banks in the European Monetary Union.

From economic theory, we get that in a banking market with perfect competition such differences would not matter, as all competitor can just survive by maximizing net present value through a respective behavior. However, banks exist because financial intermediation is a mean to cope with multiple market imperfection. Thus, although every bank must keep its profitability in mind, the banks' behavior differs with the type of institution. This holds in particular when financial contracts become incomplete.¹⁵ In renegotiation, it matters who is your counterparty. Other differences might concern the degree of risk tolerance or such straightforward issues as the scale and scope of business or just the regional expansion of business.

The differences in the behavior of the various types of banks lead necessarily to diverse exposures to risk. Portfolio theory tells us that the ensuing risk of the whole system is reduced due to diversification. A banking system that leaves room for different types of banks, each with a relevant market share, is consequently more stable than a banking system that mainly favors one

¹⁵ See, most impressively, with regard to relationship banking in Germany, Elsas/Krahnen (1998).

type of bank.¹⁶ Above, we already discussed the conditions under which the special type of regional bank, usually in the legal form of a publicly bound bank (“Anstalt des öffentlichen Rechts”) or co-operative bank,¹⁷ can sustain a relevant market share, and also the stabilizing effect the IPS has on the respective decentralized banking networks.

A specific outcome of the different types of institutions and their respective objectives is the resulting business model. Ayadi et al. (2016) use a cluster approach based on balance sheet data to identify five different business models of European banks: focused retail banking, two types of retail banking with different extensions of the scope for a better diversification, wholesale banking, i.e., mainly interbank business, and investment banking. With regard to systemic risk, investment banking and wholesale banking are particularly dangerous, as these business models usually go along with large size, high connectivity and a strong exposure to erratic capital market developments. Focused retail might also be problematic, as it lacks diversification. However, these banks tend to be rather small.

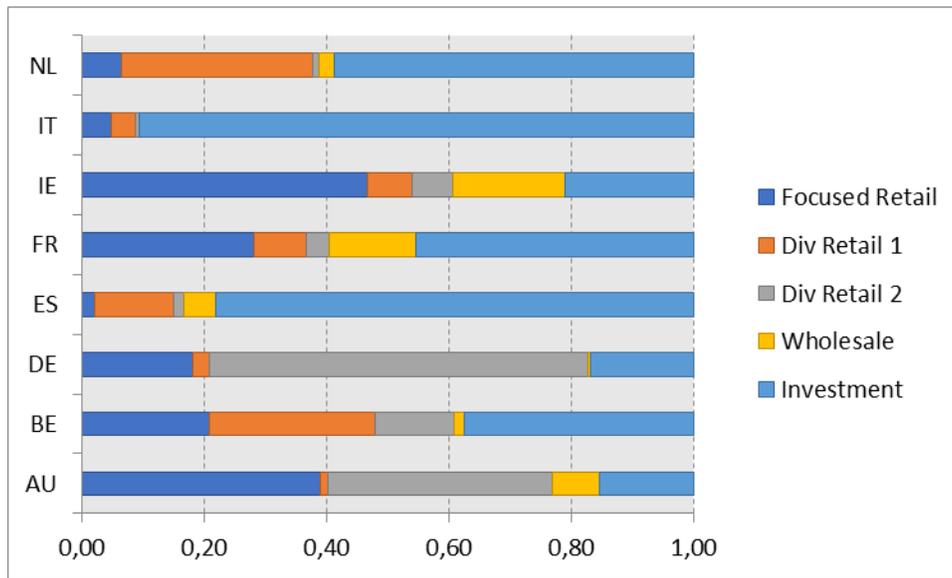
With regard to the diversification argument, the mix of business models within a financial system is also of relevance for systemic risk. In our analysis based on recent data,¹⁸ we observe (see figure 7 below) that Italy and Spain are dominated by banks that follow the investment banking approach. Regarding the business models of banks, these countries are not well diversified. In Ireland and France, the financial centers Dublin and Paris create a comparatively high relevance of risky wholesale banking, in the case of France combined with a strong investment banking orientation. Investment banking is also strong in the Netherlands and still rather significant in Belgium. Retail banking, focused or diversified, dominates Germany, Austria and, to lesser degree, Belgium and Ireland.

¹⁶ See Burghof (2011) or Schmidt (2018). For a specific example, see the stabilizing effect of different institutions in housing finance, empirically in Molterer/Amon/Tyrell (2017), and in an agent-based simulation approach on the same issue Braun/Burghof/Langer/Sommervoll (2022).

¹⁷ Note that there are exceptions to the rule, like the traditional “Freien Sparkassen” in northern Germany, and other banks that changed the legal form without leaving their network and changing their overall objective.

¹⁸ See Gischer/Ilchmann (2018).

Figure 7: Banking business models in 2018 (percent of assets)



Sources: Bureau van Dijk (2018); own calculations.

For each of the countries, the allocation of business models creates a unique profile with regard to systemic risk that, for the countries where the comparison is possible, corresponds surprisingly well with our empirical results visualized in the systemic risk matrix presented above (Figure 6). The business models are also correlated significantly with the spatial orientation:¹⁹ the greater the emphasis on the investment motive, the less decentralized the institutions' structure. The opposite is true for financial institutions with a strong focus on relationship banking; they are regularly active not only in urban centers but also in more sparsely populated rural areas. Again, it is important to notice that such institutions are enabled to provide a comprehensive access to financial services through their participation in a decentralized banking network. Consequently, we see a dominant role of customer-oriented retail banking in the two countries where such networks play a significant role.

Bank behavior can also differ within the same business model. E.g., investment bankers can concentrate on providing services for businesses or wealthy private clients, or trade on the capital markets on behalf of the bank. Credit officers can invest in established companies or finance

¹⁹ See Gischer/Illchmann (2018), pp. 46-49, for further details.

risky new projects. Banks can follow ambitious expansion policies or concentrate on their existing business. We can expect the management of a bank to define respective guidelines to create a consistent strategy, e.g., to be more ambitious and expansive, or to be more focused and cautious. The central management will do so based on the information that is available to it.

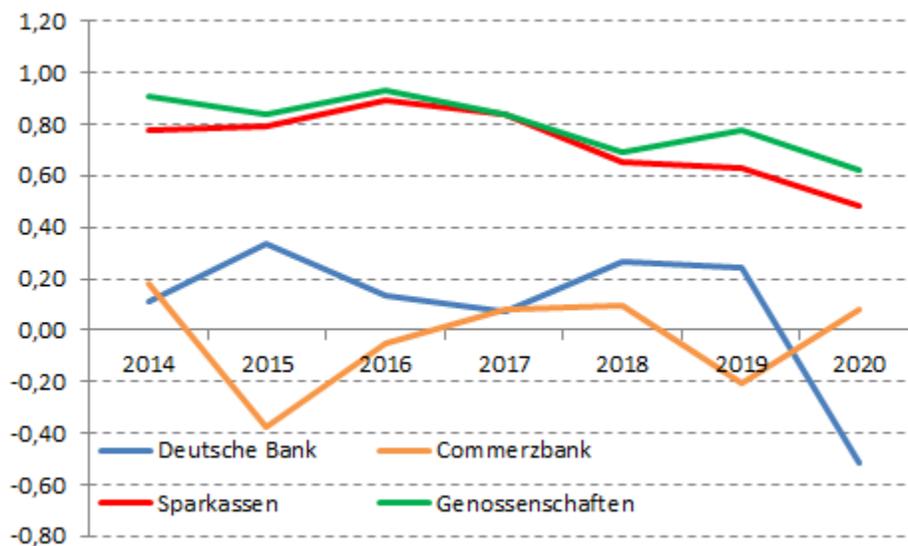
However, in a free market economy, independent banks cannot be forced to follow a strategy defined somewhere else. Thus, the degree of decentralization in a banking system also determines the variety of strategies pursued on the market. A very common preconception in this respect is that there are economies of scale in the aggregation and processing of information. Thus, large banks, through size and larger overheads (in absolute terms), develop superior, more efficient strategies. In such a world, small banks were an anachronism. However, much of the information from banking business about clients and markets is not quantifiable or verifiable. This so-called soft information can also not easily be transferred through the different levels of hierarchy. In small banks, soft information is either directly observed by the decision maker or can be credibly transferred through direct personal contacts that are much harder to establish in large organizations. Thus, small banking institutions have a pronounced advantage regarding the usage of soft information in their decision-making process.

Soft information plays an important role in banks that focus on certain regions and client-relationships, in particular in retail and corporate banking. On the other hand, capital market information – the central resource for investment banking – is not “soft”. It is publicly available, and much of it is even quantifiable. Thus, it depends on the business model if a centralized or decentralized banking model possesses superior information and is consequently more efficient.

Regarding systemic risk, creating a banking system with a greater diversity of strategies is a superior concept. The very fundamental reasoning behind this statement has already been put forward in section 3 above and need not to be repeated here in detail. In short: if the central management of large institution chooses the wrong strategy, it does so for the whole bank. Within decentralized banking networks containing smaller banks, the mistakes of decision makers in the individual banks get insignificant on a group level due to diversification.

Unluckily, the decision making in banks cannot easily be observed, or even categorized, from the outside. However, we might assume that the decentralized decision making should smooth the overall results. To show this effect, we compare the results of the two largest centralized banking organizations in Germany, Deutsche Bank und Commerzbank, with the two large decentralized banking networks in the same country, i.e., the group of institutes with a public mission (“Sparkassen”) and the group of co-operative banks (“Genossenschaftsbanken”). These banking networks compete on the same market, and they have relevant weight within the European banking community. In the respective league tables, regarding total assets, Deutsche Bank is on position 8, Commerzbank on position 25. The Sparkassen, if treated as a single institution, would oust Deutsche Bank from position 8, whereas the co-operative banks would be placed directly behind this institution on position 9. We just look at the banks in the largest country where this comparison is possible, as comparing the results of banking groups in different countries does not look very promising. The general market conditions and the development of the markets in the different countries are very dissimilar.

Figure 8: Profit before tax (percent of total assets)



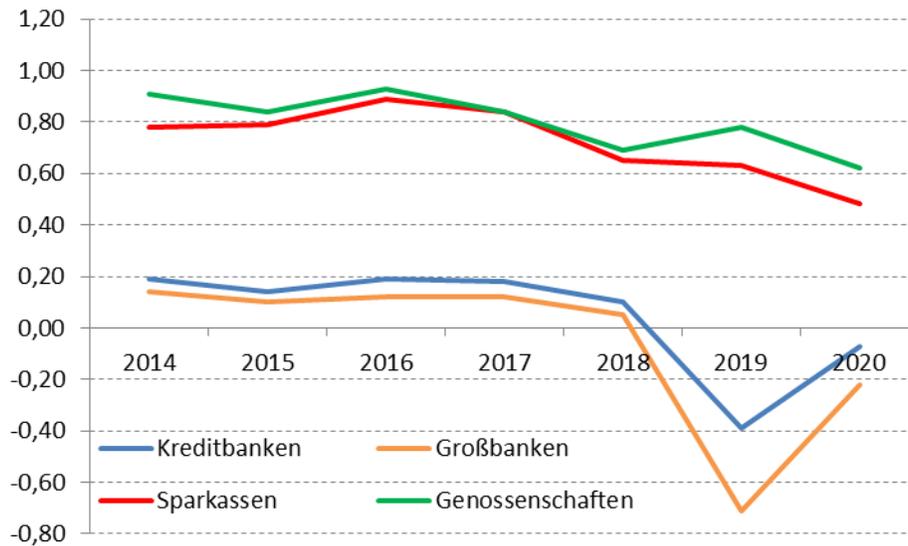
Sources: Deutsche Bundesbank

Figure 8 shows the development of the return on assets of these four banking organizations from 2014 to 2020. The results for the large centralized banks are much more volatile. Many of the developments in these banks can be linked to distinct strategic decisions of the central management. On the other hand, the members of the decentralized banking networks, in particular the small regional banks (“Primärinstitute”), might, at first sight, also look very similar, as they share a similar business model, a joint reputation and, to some degree, even a joint corporate identity. However, a closer look at the individual institutions would reveal that many of them follow very individualized strategies with some interesting variations of the common business model. Consequently, for both Sparkassen and co-operative banks, the development of the return on assets is much smoother for the whole group, although they also follow the negative trend of German banking in these years.

We choose return on assets as performance measure, as other measures are either not available for non-listed banks or might depend strongly on the degree of leverage and the respective capital structure risk the bank is willing to take. Figure 8 shows that, during the observation period and in this respect, Sparkassen and co-operative banks outperformed the two shareholder-value maximizing private banks. This might be due to the special developments in these two banks. Thus, in figure 9 below, we compare the Sparkassen and co-operative banks with two larger samples of private banks in the German banking system, i.e., the small group of large private banks (“Großbanken”), today only 3, and the whole group of private banks (“Kreditbanken”), with about 250 institutions. Besides the expected smoothing of the result of the private banks due to the diversification effect across the group, the structural dominance remains.

Interestingly, this result also holds for longer time periods. Performance measures that are sensitive to leverage might lead to a different outcome, and the results for the private banks are certainly influenced by the unsatisfying performance of the two largest banks of the group over a rather long time period. However, as all these banks compete on the same market under similar conditions, the data does not support the idea that banks that act within a decentralized banking network and do not maximize shareholder value are necessarily less profitable. If at all, the opposite is true, which can be understood as a strong signal for the outstanding economic value of relationship banking with a long-term perspective.

Figure 9: Profit before tax (percent of total assets)



Source: Deutsche Bundesbank

Regarding systemic stability, the consequences of this reasoning and the observations on the sustainability of a deposit insurance (or any alternative concept of depositor protection) are of great relevance for our discussion. With regard to risk premia, it should be significantly cheaper to protect the deposits of a decentralized banking network comprising many small banks that follow their own strategy, than to insure the deposits of large banking institutions of similar overall size that follow a single strategy with a centralized, hierarchic decision-making process. Also, the probability that the deposit insurance must be bailed out is much larger for the large banks. The only strategy to offset these fundamental adverse portfolio effects of large banks on deposit insurance is to include an ever-larger number of banking institutions. Unluckily, the EMU does not contain enough very large banks to achieve a well-diversified portfolio and thus to solve the problem on this level. Some of the banks remain too-big-to-fail, and even too-big-to-insure. The further inclusion of small banks in a single deposit insurance gives the large banks a free ride with regard to the costs of the systemic risk they cause.

How can these insights be assessed from the perspective of European policy? After a complex selection process, in the year 2000 the European Parliament proclaimed a motto for the Euro-

pean Union that seems to fit closely to our discussion: “united in diversity”. However, on the webpage of the European Union, the European commission provides a rather narrow and somewhat backward-looking interpretation of this motto: the motto signified “how Europeans have come together, in the form of the EU, to work for peace and prosperity, while at the same time being enriched by the continent's many different cultures, traditions and languages.”²⁰ It remains an open question if, within the European Union, the respected differences in culture do also embrace different ways to organize economic institutions, like banks, and if the differences, in particular with regard to traditions and culture, should also be maintained and protected for the future. Seemingly, the special interpretation of the Commission would also allow the creation of a highly homogeneous, centralized European “Superstate” the motto as such seems to exclude.

The crucial shortcoming of the interpretation is that it negates much of the value of diversity. It is certainly more fun to live in a culturally diverse world with different languages, food, or colorful folkloristic events. However, the value of diversity is manifold and not limited to the cultural area. Our paper deals with value of diversity in the design of financial institutions. Reinhard Schmidt states in this context that “[p]reserving diversity in the financial sector should have a high political priority on the national, European and global level. Its long-term benefits probably outweigh by far the short-term disadvantages that too much diversity may seem to have.”²¹ Our paper provides arguments supporting this statement regarding decentralized banking networks that protect depositors through an IPS.

His statement also implies that it is always easy to find some short-term advantages from greater homogeneity – if only a reduction in complexity and lower transaction costs. However, economic institutions consist of a combination of several elements. Some of these elements are complementary to each other, and some might even be essential for the economic functioning of the institutions.²² In this sense, the design of institutions is not arbitrary. A regulator who successively pulls some – maybe not well understood – elements from such a construction plays

²⁰ See european-union.europa.eu/principles-countries-history/symbols/eu-motto_en, 25.08.2022.

²¹ Schmidt (2018).

²² See, e.g., Hackethal/Schmidt (2000).

a kind of Jenga game. In the case of decentralized banking networks, the IPS would be such an element. Maybe the institution stays stable, maybe not. If the Jenga tower survives, the regulator can state that he was right, as the element was not essential, and some short-term advantages might be realized. If it breaks down, he could argue that it was doomed anyway. In both cases he denies responsibility for the negative impact of his action. In fact, playing this game destroys a valuable dimension of diversity in the design of financial institutions, and it destroys the market process of discovery of the optimal design of banking institutions. In both respect, banking markets lose both stability and efficiency.

5. The Integration of IPS into a European Deposit Insurance System

Three recent papers deal with the current debate on the organization of the European Deposit Insurance Scheme, mainly devoted to the handling of national IPS. In contrast to our paper, the authors criticize an independent role of IPSs in a European protection model, for different reasons. Huizinga (2022) sees above all the danger that the joint use of collateral reserves for both the protection of the depositors and the institution could lead to a liquidity shortage in emergencies. Ippolito et al. (2022) also emphasize the described dual function of IPSs we discussed, but they additionally assume that IPSs are comparable to systemically relevant banking groups, which in turn are subject to direct supervision by the ECB. Haselmann et al. (2022) also emphasize that network-specific protection schemes should be treated in the same way as SIFIs for supervisory purposes. Thus, both open another avenue of attack to destroy the specific advantages of small banks. The authors do note the strengths of the IPSs under review but see their weaknesses in the possibility that support cases that should be handled internally are passed on to the public outside the IPS. On the other hand, the authors suspect cluster risks within the IPSs due to the similarity of the business models. In addition, the (presumably) inadequate contributions to the IPS are criticized.

Our discussion above provides several arguments showing that much of this criticism of IPS is based on an insufficient analysis, be it that the system of decentralized banking networks with

IPS is misunderstood, or that risk taking in the individual bank and the creation of systemic risk is not set in its dynamic context. Thus, in section 2 we argue that an IPS for small relationship-oriented banks, despite the double task, does not necessarily require a larger reserve buffer than a DGS for large centralized banking institutions. Combined with the discussion on systemic risk in section 3 and 4, i.e., the positive effects of small size, low interconnectedness especially with regard to capital market businesses, the overall better diversification of business models and the decentralization of decision rights, we can even expect that a financial system with decentralized banking networks required an even smaller reserve buffer than a financial system that is dominated by large, centralized financial institutions.

The second counter argument, i.e., that the whole decentralized banking network with IPS should be treated as SIFIs that must come under the direct supervision of the ECB, is conflicting with the concept of decentralized decision rights in such networks – in a double sense. Firstly, we argue above that, for several reasons, the systemic risk of a network with a decentralized allocation of decisions rights is significantly lower than the systemic risk evolving from large centralized banking institutions. And secondly, an aggregated supervision of decentralized banking networks as a single unit created an unsolvable conflict with the concept of decentralized decision rights, as it required a central authority to enforce the regulatory requirement within the network. This way, regarding economically sustainable banking models with a relevant economic weight, by definition, only large centralized banking groups were claimed to be regulatory feasible. The outcome of such a regulatory fixture on systemic risk would, through the respective changes in the structure of the banking system, be strongly negative. Finally, with regard to the similarity of the treatment of actual banking crises described in section 2, it is not evident why the same argument does not hold for any system of depositor protection, be it an IPS or a DGS.

Thus, it is not only the many years of experience with a stable financial system of small and medium sized regional banks in Austria and Germany that speak against the reported reservations. In its core, our arguments counter the European Commission's seemingly preferred model of a "one-size-fits-all" insurance system. A postulate borrowed from philosophy and traced back to Aristotle speaks against the latter: It is fair to treat equal things equally and unequal things une-

qually. As we have seen, this also - or especially - applies to economic issues in the context of very heterogeneous framework conditions. For certain, the special institutions in European banking also require a special treatment if we don't want to end up in a very homogenous European banking system consisting of mainly large and very large institutions, with disastrous consequences for competition and systemic stability.

It is worth mentioning that the positive effect of decentralized banking networks on competition holds despite the fact (stressed by some authors) that many of the member banks concentrate their business activities on a certain region.²³ Firstly, many of the banks within the respective networks compete in overlapping business regions, and in some business segments even with the central institutions of the network that address a larger region, e.g., a state or province, or even the whole country. Secondly, at least the co-operative banks and the Sparkassen in Germany usually employ a certain proportion of out-of-region business of about 10%. Thirdly, the decentralized networks of Sparkassen and of co-operative banks compete on a regional basis against each other and with other banks where, in more centralized banking systems, you will often find just one competitor in a region, or even no local branches of banks at all. The negative effect of a larger distance to banks and lack of local competition on, e.g., loan conditions, are well documented in the literature.²⁴

With regard to systemic stability, a similar line of criticism deals with the similarity of the business models of the so-called primary institutions in decentralized banking networks, in contrast to the wider scope of businesses you can find in larger banks. We already pointed out that even under the umbrella of the respective networks' main business model of regional and client oriented relationship banks you can find very different interpretations of this general concept, and that even within the same business model the individual banks can follow very distinct risk taking strategies. Worse still, the critics, in their selective view, now deliberately ignore the fact that the small, regional institutes of decentralized banking networks are embedded in into the

²³ For the risk of a total discharge of the regional principle in the context of a misguided deregulation see the events that led to the disastrous failure of the conglomerate of formerly regional savings banks in Spain, Bankia, e.g. in Illueca/Norden/Udell (2014).

²⁴ See, e.g., Degryse/Ongena (2005), or more recently, i.e., even under the conditions of the internet age, Kärnä/Manduchi/Stephan (2020).

respective network structure that contain also some larger central institutions and some specialists for a wide range of business segments. Thus, the networks comprise individual institutions with very different balance sheet totals and a broadly diversified focus on customer business, and, as networks, achieve an almost perfect spatial diversification. It remains an open question if the ensuing complexity can be better managed in decentralized networks with respectively focused institutions, or in large centralized banking groups.²⁵

After discussing the valuable contribution of decentralized banking networks to the efficiency and stability of a banking system, we want to stress the role of an IPS in such a banking network. What makes this special solution for depositor protection a significant building block in the Jenga tower of decentralized banking? Some aspects have already been mentioned: Valuable long-term client relationships require a high degree of stability, even if the participating bank gets into economic troubles. The transaction costs of a merger within the network tend to be comparatively low, as the members of the network follow similar organizational principles, and often use the same tools and systems. Furthermore, as the member banks share to some degree a joint corporate identity and a joint reputation on the market, they have a strong interest to solve occurring problems with a minimum of backlash and noise. Even better, they are very much interested to prevent the occurrence of such problems through a respective monitoring within the network. Thus, the IPS contribute to both the stability and the cohesion of decentralized banking networks.

We can set these advantages of depositor protection through an IPS for decentralized banking networks, and the contribution of these networks to efficiency and stability of a banking system, against the well-known drawbacks of a DGS, be it on national level or, as third pillar of the European Banking Union in its more radical interpretation, a single or interconnected deposit insurance for the whole European Monetary Union. Firstly, we should be aware of the fact that a European deposit insurance will never have a sufficiently large buffer to protect depositors against the failure of one or even several of the real larger players, i.e., banks with total assets

²⁵ The complexity of large centralized banking institutions is undisputedly a highly relevant dimension of their individual risk and of their contribution to systemic risk. On the other hand, the organization of a wide scope of business activities within decentralized banking networks might afford higher efforts and costs of coordination, which, however, do not necessarily increase systemic risk in a significant way.

of around or even more than one trillion Euro. This statement holds even if the European DGS included all the small banks in the European banking system. Thus, even though the technical insurability of the depositors' risk increases mechanically if we can build on a larger pool of participating banks, the system will never be self-sufficient and remains always depend on the ECB or states performing their role as guarantor for the stability of the banking system.

Another very evident problem is pricing. If the risk premia are not risk-adjusted, they create incentive to free ride on the joint deposit insurance through excessive risk taking. However, the risk premia should not depend on the risk of the individual institutions, but on its contribution to systemic risk. Otherwise, a successful arbitrage strategy would be to keep the individual risk of the bank rather low while getting as "systemic" as possible, e.g., through size or connectedness. Determining such systemic risk premia for such a large set of very diverse banks in different countries seems very difficult, if not impossible. Furthermore, some dimensions of the contribution to systemic risk might be difficult to price for political reasons, like country risk. Thus, even if the risk premia of a joint European deposit insurance were meant to be risk-adjusted, the actual pricing rules would represent a very rough approximation full of methodological and political compromises. In the worst (and unluckily not improbable) case, in the end, the regulator will create a system where small and low-risk banking institutions do pay for the systemic risk generated by large and systemically relevant banks.

The ECB's supervision of banks is a valuable instrument to reduce the adverse incentive effects of deposit insurance, as it is meant to guarantee that all banks participating in a joint deposit insurance represent a similar low, and in this sense acceptable, risk. Thus, we might argue that all banks participating in the joint or interlinked European deposit insurance should also be directly supervised by the ECB. Consequently, if all banks were brought under the umbrella of a single deposit insurance, the ECB supervision had to cope with all banks and would lose its focus on systemically important institutions.

Furthermore, it might be rather difficult to create a regulation that binds all types of banks to the same narrow range of systemic risk. Actually, even in today's system with an involvement of national supervisory agencies, the European regulator was not able to implement a feasible

concept of “proportionality”, with the strong tendency to overregulate small and non-systemic institutions. The “small banking box” is only a first small step into the right direction, and it comes too late to save the independence of many otherwise sustainable small banks.

A regulatory setting in which all banks must represent a similar systemic risk according to its respective regulatory representation would also greatly reduce the set of feasible business models in banking and imply an even more homogenous banking system. This coercion to greater homogeneity has negative impacts on both the dynamic efficiency and the stability of the banking system. It’s exactly the opposite strategy to leaving free space for a greater diversity and to new and promising business ideas in banking. Besides, in such a centralized system everything depended on the ECB successfully limiting banking risk, while alternative mechanism – like the supervision on the national level and the (actually strongly incentivized) control within decentralized banking networks – were disabled. Thus, there are very good reasons to limit the activities of the joint European supervision through the ECB to a set of rather similar banks where it will have the greatest and most positive impact, i.e., large, centralized and systemically relevant banking institutions.

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