



SOAS Centenary Lecture on International Banking Supervision*

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1. Introduction

Supervision of internationally active banks has become a key policy issue after the financial crisis, both within Europe and even across continents. Despite liberalization and economic union the remaining frictions in the increasingly integrated banking markets seem key to financial crises and financial instability. The crisis of 2007/8 provides quite a number of examples for faulty business models of cross-border banks and drastic failures of cooperation between national supervisors and, hence, provides the basis for this renewed debate. In my lecture I would like to concentrate on the European experience and try to draw some more general lessons that may also be of a wider interest for other areas with increasing economic integration.

My presentation will focus on the role of local information and competition. The key economic role of banks is widely attributed to the delegated provision of information as well as delegated monitoring (Diamond, 1984). Relying on a competitive banking market arguably serves the purpose to decentralize the decision about the best business models of information acquisition and to moderate market power.¹ The best banks will earn profits and survive while the less successful bank business models will eventually be eliminated and forced to exit the market. The role of supervision largely relates to moderating the process of exit and to prevent potential contagion due to fear and distrust by largely uninformed but weary depositors. As the recent crisis demonstrates, supervision went, largely – with one notable exception - smoothly within the United States and the UK reducing excess capacity in the banking industry in an orderly way, while there was little consolidation in the European Union due to a lack of an adequate supervisory infrastructure being able to deal with the resolution of cross-border banks. Essentially, most of the troubled banks were presented as too systematic to fail. In terms of banks

assets to regional or national GDP it was easily argued that the failure of the banks would put (small) countries at risk of insolvency. Hence, the single lender of last resort, i.e. the European Central Bank (ECB) had no practical alternative to providing the required liquidity independently of the quality of the underlying bank assets.

There was also one notable exception in the Anglo-Saxon area, the spectacular failure of Lehman Brothers. But also in that case, cross-border coordination between the supervisory agencies, the Fed in the USA and the FSA in UK seemed not to have worked in a smooth and frictionless way. Also in this case supervisors could not agree about the resolution or burden sharing for a potential recapitalization (Gehrig, Haas, 2014).

After the failure of decentralized supervision in the crisis 2007/8, does the experience call for centralization, as envisaged in the current version of the European Banking Union? I will argue that this is not necessarily the case. There are alternative designs, which do allow banks a choice between national supervision and centralized supervision. What matters though is the centralization of resolution. The advantage of national supervision is the closer proximity of the supervisor and his better access to local information while the central supervisor necessarily will be less responding to national, regional or local concerns. The willingness to recapitalize will, however, differ across supervisors. Recapitalization of banks regulated nationally will draw more on national or regional budgets, while centrally supervised banks will have greater access to common resolution funds.²

This lecture is structured in three parts. First I will document some recent developments in cross-border banking. Then I will briefly describe the developments in Europe before I address

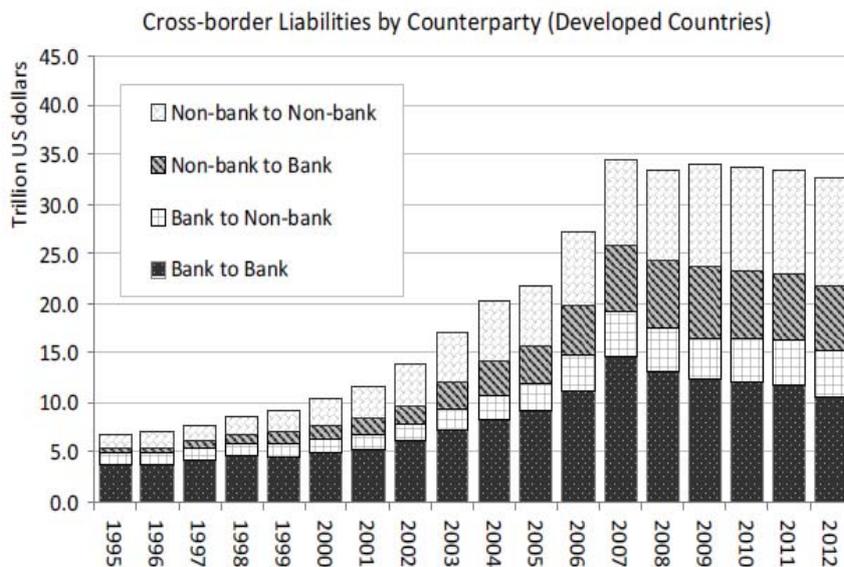
¹ This is not to say that competition will annihilate market power completely. Local information monopolies necessarily confer a certain amount of market power and inhibit the bite of price competition (Broeker 1990, Gehrig 1998).

² The precise amounts of burden sharing in case of recapitalization or resolution need to be specified ex-ante and enforced by a single independent resolution agency. Potentially diverging national and central interests may have

the question about the desiderata of some desirable or even optimal supervisory system. This section allows to compare the current political concept of Banking Union recently established for the European Union with an idealized, probably utopian, model, and discuss potential shortcomings and their likely long-run consequences. The conclusion summarizes the main lessons.

2. Nature of Cross-Border Banking

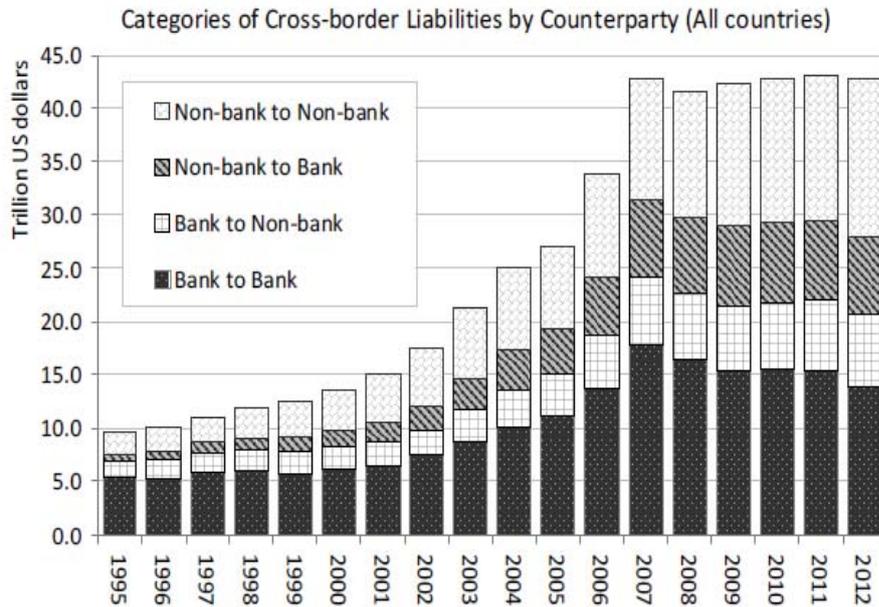
To set the stage, what is the evidence about cross-border banking so far? Figures 1 and 2 demonstrate that cross-border lending essentially is whole-sale bank to bank lending. Worldwide direct cross-border lending to non-banks is negligible.



Source: Bruno, V. and S. Shin: Cross Border Banking and Global Liquidity, 2014.

Fig.1: Cross-border liabilities for developed countries

different financial implications in case of insolvency. These different fiscal implications are crucial for shaping supervisory incentives for the different supervisory agencies, national and central.

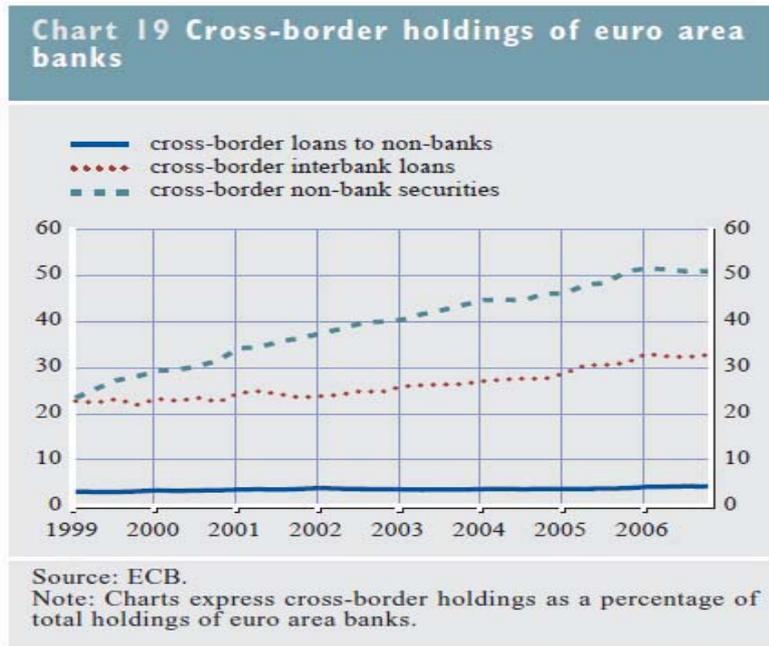


Source: Bruno, V. and S. Shin: Cross Border Banking and Global Liquidity, 2014.

Fig.2: Aggregate cross-border liabilities

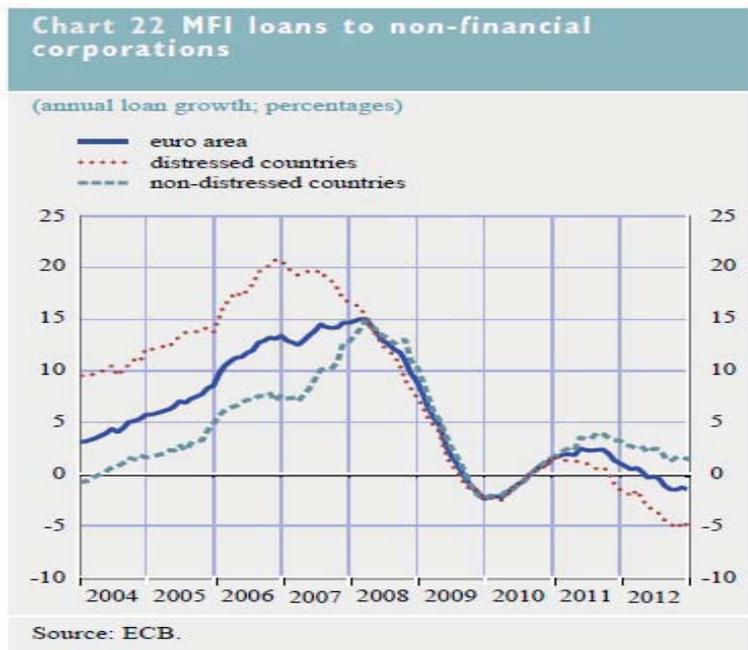
While Fig. 1 and 2. are based on aggregate world-wide statistics, Fig. 3 establishes that even within economically integrated areas that pattern does not change. Even within the European Union there has never been considerable cross-border lending to non-banks. Moreover, there has been little change in the amount of cross-border lending, while the amount of interbank lending did increase modestly in the past decades until 2007.

Finally Fig. 4 establishes that fragmentation sharply increased after the financial crisis in 2007. Despite massive interventions by the European Central Bank in the provision of liquidity only small improvements in integration of the banking market can be observed.



Source: ECB Financial Integration Report, 2007

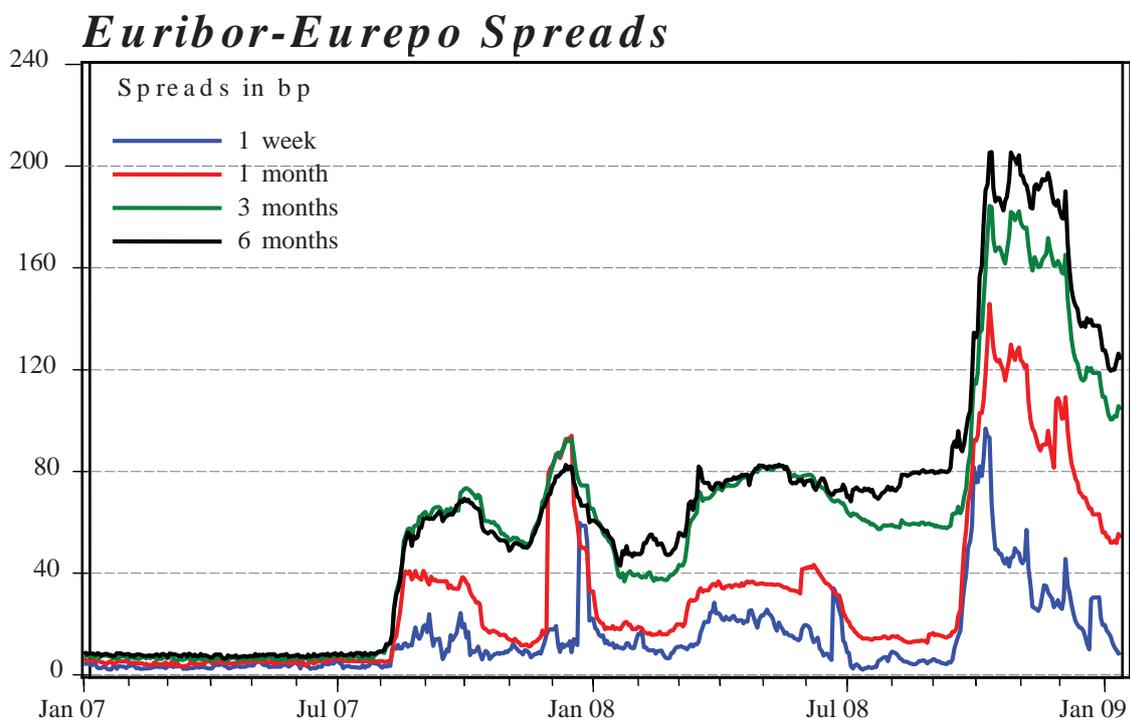
Fig.3: Cross-border lending to non-banks relative to cross-border securities and interbank lending in the euro area.



Source: ECB Financial Integration Report, 2013

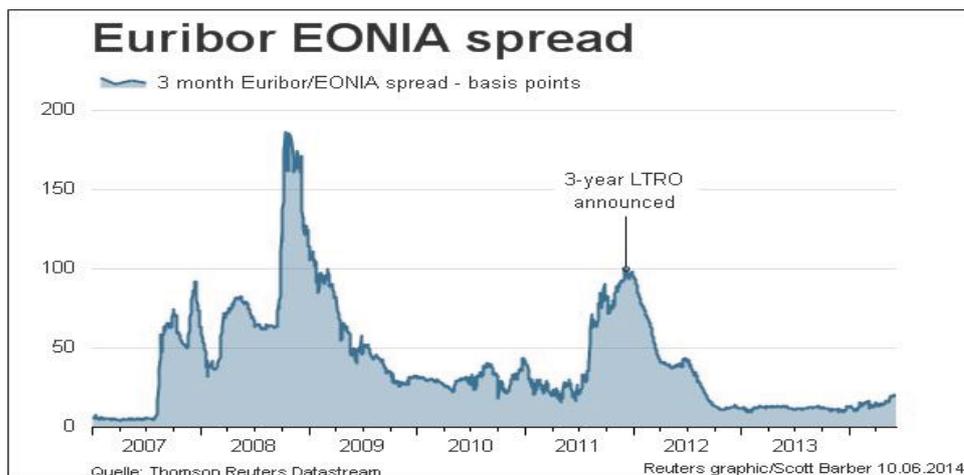
Fig.4: Increasing fragmentation in the euro area after 2007.

Moreover, the interbank market changed its mode of operation quite drastically in September 2007, as can be seen in Fig. 5 and 6. The interbank market started pricing bank counter-party risk only with the advent of the liquidity crisis and moved back to pre-crisis levels. Despite massive guarantees and despite massive liquidity interventions by central banks, spreads between secured and unsecured interbank deposits remain at significant positive levels.



Source: Data provided by Hans-Helmut Kotz, Deutsche Bundesbank, 2009.

Fig5: Increasing fragmentation - the emergence of counterparty risk



Source: Thompson Reuters Datastream

Fig.6 Fragmentation remains well above pre-crisis levels

Let me summarize the main observations:

- (1) There has always been a high degree of fragmentation in international as well as European lending markets. The 2007/8 crisis and the ongoing sovereign crisis even increased fragmentation and despite massive central bank intervention the pre-crisis levels of integration have not been reached again.
- (2) Cross-border lending is concentrated on the inter-bank market. Retail cross-border lending has been and remains negligible.
- (3) I might add another observation that in Europe cross-border entry predominantly has taken the form of acquiring subsidiaries in the host countries. It almost never has been in the form of expanding the branch network. This observation is important for the regulatory debate since even fully owned subsidiaries are independent firms that can fail independently of the parent bank. In contrast, the fate of a branch is always intimately tied to the parent bank. The observation shows that liability issues have been a prime concern for cross-border activity within Europe.

Observation (1) is in line with the local information hypothesis (Gehrig, 1998, Degryse, Ongena, 2005, Hauswald, Marquez, 2006). It demonstrates that local information matters in banking markets. Local information is a well-established source of market fragmentation, in banking as well as in financial markets (Gehrig, 1993). Moreover, as mentioned in footnote 1, informational asymmetries reduce the bite of price competition.

Observation (2) shows that the interbank market has become a major vehicle of contagion and systemic risk in global banking markets. Liquidity withdrawals in the interbank markets will immediately affect all active banks at the same time.

Observation (3) finally establishes that liability concerns are key in banks' cross-border strategies.

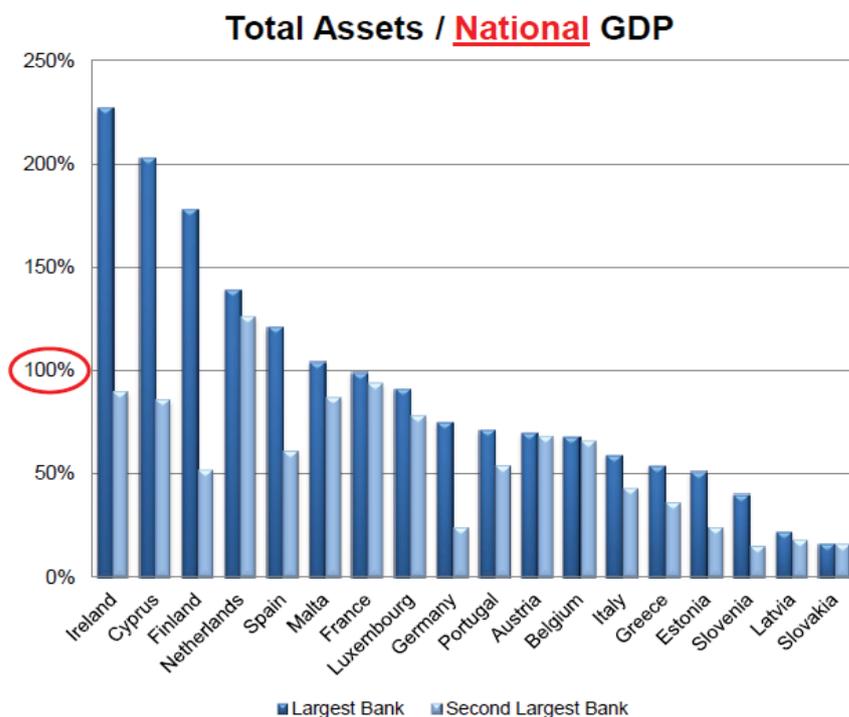
3. Supervision of Cross-Border Banks – European Experience

Initially European integration was largely guided by the principle of subsidiarity and, hence, decentralized supervision. In its White Paper (Com 85/310) on “Completing the Internal Market” three main principles for supervision are established as i) minimal supervision, ii) home country control and iii) mutual recognition. This decentralized approach tried to reap the benefits of cross-border trading while maintaining the authority of national supervisors. Arguably, the better supervisory models should attract cross-country activity leading to some form of rate to the top concerning supervisory standards. As described above, however, cross-border activity between banks and non-banks did not take off, neither before nor after the introduction of the Euro.

Increasingly concerned about the lack of integration in the retail lending market the ECB started an initiative “Strengthening the EU framework for Cross-Border Banks” (ECB, 2007) to foster financial integration by identifying supervisory short-comings in the national supervisory schemes as barriers to effective cross-border activity. This initiative was triggered just months

prior to the financial crisis and can be viewed as a first attempt of the ECB to take over central supervisory powers outside its original mandate. It is interesting to note that the concerns raised prior to the crisis were based on the state of market developments in real terms but neither on stability nor on systemic concerns.

The financial crisis revealed a lack of supervisory infrastructure to deal with the resolution of failing cross-border banks, and, thus allowed the ECB to change its strategy for lobbying to extending its mandate into banking supervision and affecting real activity. As a consequence of the non-existing resolution infrastructure for cross-border banks the ECB as the effective lender of last resort was forced into providing ample liquidity in order to prevent the asset problems of European banks to turn into insolvencies triggering potentially systemic contagious runs. In fact, and quite contrary to the US there has been virtually no exit and clean-up of failed banks in Europe as a consequence of the financial crisis. With the excuse of systemic relevance politicians have been quite successful in keeping Zombie banks alive. And in fact, when bank assets are measured relative to the GDP of domiciling countries, it seems that there are at least as many systemically important banks as countries in all of Europe, despite the fact that obviously some countries are quite small (Fig. 7). Consequently, a too-big-to-fail (TBTF) bank of a small country might be quite small within the whole of Europe.



Source: H. Ettl, 42. Economics Conference, ÖNB (2014)

Fig. 7: Bank assets relative to national GDP

The lack of clean-up and the build-up of legacy assets generated an immediate urge to coordinate the exit of failed bank business models in Europe (Larosiere, 2009, Liikanen, 2012). While the Larosiere Report still maintained the principles of subsidiarity and decentralization, a surprising paradigm shift occurred during the discussions of the ESM as a rescue fund for failing states in 2012 towards centralization. Thus, the idea of a Banking Union was born more or less spontaneously at a European Council meeting that established the ESM as a rescue fund in 2012 (Constancio, 2014), and has been implemented at high speed since. How could it happen that the long cherished principles of subsidiarity were essentially compromised at the height of the sovereign debt crisis, at a time when solidarity was needed most? Has this decision been a good one, for Europe, or for whom? What are its long-run costs? Would there have been alternatives?

This is going to be the topic of the next chapter. Let us first concentrate on the distinctive features of the Banking Union currently under way of being implemented by European politics.

The European Banking Union consists of three elements, (i) a **single** supervisory mechanism (SSM), (ii) a **single** resolution mechanism (SRM) and (iii) and a European deposit insurance fund.

The single supervisory mechanism has been approved by the European Parliament on September 12, 2013 and is currently being implemented (see Nouy, 2014). It implies that essential supervisory powers for all roughly 6000 banks in Europe are transferred to the European Central Bank (ECB). Effectively, though, the supervision of large and systemically important banks will be transferred to the ECB, while smaller national banks will remain under national supervision. Still the ECB has received the power to intervene also in those cases. Banks with assets of more than 30 bill € or with more than 20% of national GDP will automatically be supervised by the ECB. For those systemically important banks information sharing between national supervisors and the central supervisor is encouraged. The supervisory board is independent from the bank's monetary committees in order to strictly separate supervision from monetary policy.

The stated purpose of a single supervision is to apply a single rulebook to European banks, and, thus, reduce complexity of business models and supervision. While clearly simplicity of rules and business models may be helpful for reorganization and rescue operations in periods of crisis, it reduces the richness of competition and increases correlation of business models, and, thus, exacerbates systemic risk. Increasing conformity reduces options for diversification. I will argue below in favor of a richer decentralized supervisory structure more in line with the Larosiere report and the 1985 White Paper, which may add to the resilience of the banking

system and contain collective disincentives as long as resolution and recapitalization are coordinated along well-specified rules.

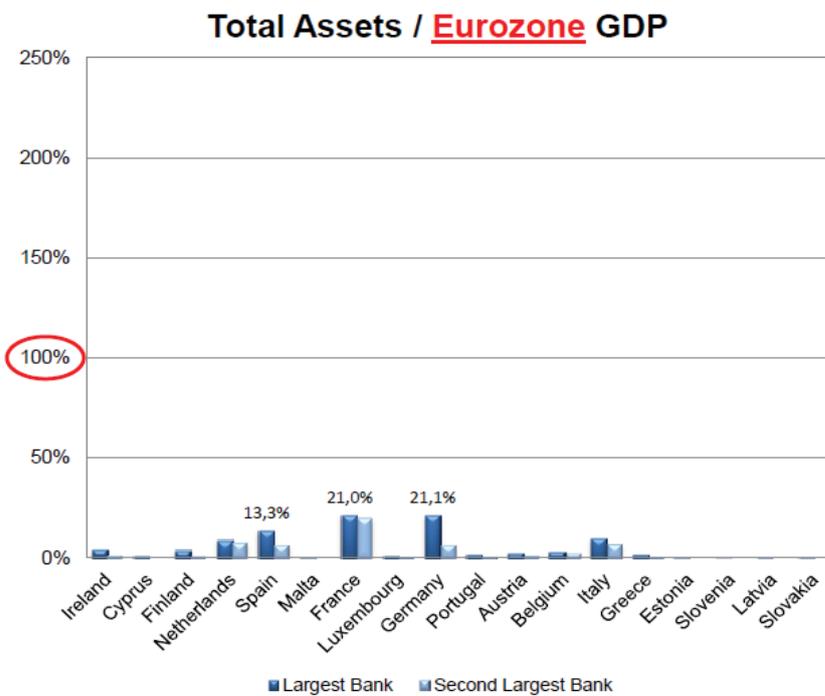
Hence, the central part of any supervisor system is the coordination and centralization of the resolution mechanism. It is no surprise that the de facto lender of last resort, the ECB, is arguing so strongly in favor of centralizing resolution powers. In their words they openly confess that lending of last resort is akin to life support for failed banks that should be closed in an orderly way: "...the SRA will ensure that failing banks are resolved swiftly, thereby reducing or even eliminating the pressure to keep the entities artificially alive through liquidity assistance." (ECB, 2013)

On March 20th, 2014 the European Parliament approved the Single Resolution Mechanism (SRM) in principle. This implies the creation of a resolution fund with national fiscal contributions in order to cope with large failing banks on a European level. The SRM should provide an instrument to denationalize resolution or recapitalization. Of course, its ability to do so will depend on the size of its budget, and, hence the national contributions to the fund as well as the degree of political independence.

A European Deposit Insurance Fund still faces considerable political resistance largely by savings banks and cooperative banks that were not dramatically affected by the 2007/8 crisis and, therefore, lobby against being forced to insure the large banks that got into trouble. While the European Deposit Insurance constitutes the third pillar of the European Banking Union it seems less relevant than the Single Resolution Agency. In principle, deposit insurance funds could even evolve by ways of self-regulation. Moreover, as the US-experience shows, insured banks tend to run weaker balance sheets and take on more risk (Wheelock, Wilson, 1994).

The main goals of Banking Union are the coordination of resolution of failing banks and the denationalization of supervision. To the extent that Banking Union helps to frame political

debate on the European market rather than national boundaries, indeed standard lobby arguments such as TBTF will be far less convincing. In this sense Fig. 8 show how the largest banks in Germany and France, Deutsche Bank and Societe Generale, will only exhibit asset to GDP ratios of slightly more than 20%. Clearly, Europe could deal easily with the failure of these systemic banks. As Fig. 8 reveals, the Internal Market will not see many TBTF banks any more. This should constitute a good prospect to reduce over-capacity in the European banking market.



Source: H. Ettl, 42. Economics Conference, ÖNB (2014)

Fig. 8: Bank assets to Union GDP

4. How to Supervise Cross-Border Banks?

As we witness a dramatic shift in paradigm from a completely decentralized system of supervision towards an essentially centralized system centered at the Central Bank naturally the question arises about alternative designs. To be sure, the political process evolves according to needs and opportunities of the time, which especially in periods of crisis refers most of the agenda setting power to the active executive powers. So without proper institutional safeguards it is no surprise that effectively the Central Bank attracts new mandates beyond its original mission. However the question remains, whether centralization of supervision with the lender of last resort is a desirable market design? How is the independence of monetary policy impaired by mixed, and hence, less focused missions? How do badly managed large banks compromise the independence of monetary policy, and to what extent will oversized unprofitable banking systems trap monetary policy in repression policies? What are the lessons for impartial external observers in other regions of the world? Should they follow the European way, and, how can they improve on it?

I would like to suggest some alternative design on the basis of a highly stylized theoretical model (Gehrig, 2014), which tries to mediate between the need of coordination of supervision for cross-border banks and with the advantage of local information. In fact I will show that it may be optimal to have competing supervisory agencies, national supervisors plus a common supervisor, and let market participants decide, which supervisor to select. The supervisors' incentives will be strictly defined ex ante by burden-sharing rules and rules on recapitalization. National supervisors will imply relatively larger national contributions while the central supervisor will demand proportional contributions of the countries supporting the union in case of failure or insolvency.

In order to illustrate the argument, consider an economy consisting of several countries of potentially various size. These countries may be represented as independent islands and as in

Gehrig (1996) banks can select to establish branches on a single or on several islands of their choice if not on all. The role of banks consists in making responsible lending decisions. Hence banks produce information about borrowers, provide loans to the creditworthy ones and reject the non-worthy applications. Banks receive funding as long as depositors and investors trust the management in doing viable lending decisions. In particular, banks screen underlying binary investment projects and classify them according to their creditworthiness. By performing the creditworthiness test they privately observe a noisy signal of the true probability of repayment for the underlying project. They will accept all positive NPV projects with a sufficiently high probability of repayment.

If all banks were trustful and lending errors were nil, no further supervision and regulation was required. However, creditworthiness tests are imperfect, screening is expensive, different stake-holders have different objectives, and banks' business models need to prove resilient against competition of other, possibly better banks. The very nature of a market model for banking decentralizes the choice of viable business models to the market. Hence, necessarily there will be superior business models and others that fail. Accordingly, depositors need to be weary. They may run the bank for good or bad reasons when bad rumors about the banks prospects are circulated. It is the role of supervision to essentially maintain trust among depositors, to preserve investors' goodwill, and to moderate the unavoidable exit of failed business models in an orderly way. But who should supervise and moderate potential exit?

In line with the local information hypothesis I assume that each island has a home supervisor, the so-called national supervisor. This supervisor has privileged local information about the local branches' lending portfolio which allows him to stop the project without any extra cost in case the signal is bad. In particular I follow Beck and Wagner (2013) in assuming that the local supervisor will receive a costless signal about the true probability of a project being

successful or not.³ So he can close the bank in case the signal is sufficiently negative. At this stage no extra costs will occur. If, on the other hand, the supervisor avoids action and plays on time, either the speculation is successful and the portfolio returns allow the bank to survive, or the speculation fails and the bank needs to be closed at a cost $c > 0$, which may include social costs as well.

In this framework we can discuss three alternative scenarios: (i) decentralized local supervision, (ii) centralized supervision and (iii) a hybrid with local supervisors and a central supervisor.

i. Decentralized local supervision

The model of decentralized supervision mirrors the home country control principle in place prior to Banking Union. In this model banks are supervised by the local supervisor in the country of incorporation. In the home country this supervisor enjoys local informational privileges. However, he has no privileged information for the branches in the other markets and needs to rely on the information provided by the host country supervisor. Particularly in period of stress this information will be biased. Therefore I assume that effectively no information is communicated.⁴

The (risk neutral) host country supervisor of country/island i will close a purely local bank when effectively the repayment probability falls below a threshold of $\lambda_i < \frac{1+c}{R+c}$. If the bank has branches abroad, the supervisor will only have privileged information for the local market share x_i and attach the prior mean $\bar{\lambda}$ for the remaining market share. Accordingly, the closure standard

³ The idea of local regulators receiving privileged information goes back to Repullo (2001).

⁴ This is a strong assumption in order to simplify the analysis. However, the argument only requires that communication between home and host country supervisor is imperfect (as modelled by Gehrig, Regibeau, Rockett, 2000, or Gehrig, Stenbacka, 2007, 2011)

will increase to a level between λ_i and $\bar{\lambda}$. Moreover, the closure standard will become stricter the larger the cross-border business of the bank is. So, quite contrary to what we witness in Europe, closure standards should increase in the amount of cross-border activity of the bank. Cross-border banks should not be granted a too-big-to-fail guarantee. In my model such a guarantee implies that ultimately too many bad assets will be rescued.

Also applying a single supervisory standard would not be a good idea under home country control. Essentially it would imply stricter standards on purely domestic banks and laxer standards on cross-border banks. Hence, single standards tend to subsidize larger cross-border banks at the detriment of smaller purely local banks.

So my model predicts that closure standards should reflect the riskiness and the degree of local information of the local supervisor. Cross-border banks need to be supervised more stringently by the home supervisor. Such stringency can only be relaxed to the extent that credible information can be exchanged with the host country supervisors.

ii. Centralized supervision

Centralized supervision reflects the model of Banking Union. In this case all effective supervisory power is given to the central supervisor, who does not enjoy any informational advantage.⁵ Precisely, because of the lack of local information this supervisor can apply a single standard, or single rule book as it is termed in the euro area, to all banks across all islands.⁶

⁵ At the implementation stage considerable effort is invested in eliciting cooperation of national supervisors to forward local information. Moreover, joint supervisory teams are planned to generate the desired information flow from national supervisors to the ECB. However, it may be forcefully argued that the exchange of information will remain strategic, and hence biased, as long as national interests differ from the interests of the ECB.

⁶ The Banking Union actually allows the ECB to delegate supervision of small banks to local supervisors. However, the ECB always has intervention and overruling powers.

What does a common centralized lending standard imply for the banking structure? As a first finding, centralized supervisory standards will be stricter for all banks if the costs of resolution are the same for local supervisors and the central supervisor.⁷ In that case my model predicts that especially purely local banks will lose the value of local information relative to home country control. So for them supervisory standards are excessively high, and they might prefer the old system of local supervision.

Also cross-border banks will suffer from this lack of local information but to a lesser extent. Cross-border banks of larger nations will suffer more than cross-border banks of smaller countries, since the informational loss relative to local supervision is directly related to the local market share in the country of incorporation. And again the loss of information is related to the effectiveness of information exchange between national and central supervisors. The better this exchange, the more lenient can central supervisory standards become.

In both cases, however, since the banks' portfolio returns are related to the underlying real loans, higher closure standards under centralized regulation imply that projects are prematurely closed because of the lack of information at the central planning agency. This may reduce regional growth and employment prospects. In that regard it does not come as a surprise that representatives of local central banks complain about potentially excessive supervisory standards as they are applied currently in the run-up to Banking Union. Along this line, Ewald Nowotny, the Governor of the Austrian National Bank is concerned that the stress tests in preparation of Banking Union might "be very tight, possibly too tight" (Rexer, Zydra, 2014). At the same time he is not concerned about the major Austrian banks involved in the stress test. But his complaint reflects his concern about increasing stringency that in line with my model necessarily will come

⁷ While Dell' Ariccia and Marquez (2007) argue that centralization of supervision is efficiency enhancing precisely when supervisory standards are increased, this example shows that local informational advantage might balance their finding towards decentralized supervision.

along with centralization of supervision. How much more will representatives of larger countries be concerned?

As soon as resolution costs vary across supervisors, a tradeoff emerges. Local supervisors will offer more attractive standards to purely local banks while the central supervisor offers a standard that appeals to banks with larger cross-country branching networks. For example, if closure costs are lower for the central supervisor, $\bar{c} < c_i, i = 1, \dots, N$, especially cross-border banks will prefer centralized supervisory standards over the local standards. In other words, the large cross-border banks are more willing to forego the benefit of informational benefit in order to gain cheaper resolution support.

iii. Combined supervision by local supervisors or a central supervisor

The design options are neither exhausted by the two polar cases nor by the need of real politics to make choices without alternatives. There always are alternatives. One obvious alternative is to have both central and local supervisors and let the banks select the supervisor of their choice. This allows banks to select the local supervisor when they value local information and to select the central supervisor when they value cross-border activity. While central supervision is based on less information it will also have benefits. This may be the case when resolution benefits are modelled by lower closure costs $\bar{c} < c_i, i = 1, \dots, N$, possibly because the supervisor has a lower shadow cost of resolution funding.⁸

To the extent that banks engage in cross-border lending their preferences are tilted away from local information towards resolution costs. This gives rise to different equilibrium

constellations. Under extreme constellation monomorphic equilibria will result with banks selecting only one or the other type of supervisor. When closure costs are minimal, obviously banks will only opt for local regulators. When closure costs are substantial and local information is of little value, all banks will opt for the central supervisor.

For intermediate parameter values polymorphic banking structures will emerge with local banks and banks with smaller branch networks selecting local supervisors and more active cross-border banks selecting the central supervisor (Gehrig, 2014).

The polymorphic structure has a number of economic benefits. Most importantly, the efficient use of local information fosters local economic activity, growth and employment. This is particularly important for smaller islands/countries.

Moreover, supervisory heterogeneity fosters economic diversity and thus propagates a richer market structure. By allowing for richer differentiation strategies, heterogeneity is an effective curb on concentration in the banking industry, both in terms of diversification benefits (across business models) and in relaxing the force of price competition (Shaked, Sutton, 1982). Consequently, diversity also tends to contain size as a systemic risk factor. Centralization, on the other hand, runs the risk that by standardizing supervision and homogenizing price competition, also business models become homogenized and highly correlated. This induced correlation unintendedly adds to systemic risk, since one bank in trouble would seem bad news for all the others.

Further benefits of supervisory competition are reputational concerns of the supervisors. They help to reduce capture, and, therefore to break the bank sovereign doom-loop. As an example one might refer to the current esteem of the Nordic banking supervisors, who succeeded

⁸ Beck and Wagner (2013) emphasize another potential benefit of centralized supervision, namely the internalization of cross-border externalities. Cross-border externalities may hence be another reason for active cross-border banks to opt for central supervision.

in abolishing over capacity and in generating a healthy banking structure that proved relatively immune to the vicissitudes of the 2007/8 financial crisis.

So far the analysis has concentrated on banks' cross-border lending activities for the case of cross-border branch networks. In Europe cross-border banking, however, is largely organized by subsidiaries in host countries. According to the home country principle, these subsidiaries are considered as legally independent banks subject to the supervision of the home country supervisor. So effectively, subsidiaries resemble our purely local banks in the analysis above. In this case the local advantage of local supervisors is even more relevant than for branch networks. So in this case the costs of centralized supervision are even stronger. In this case the polymorphic equilibrium of subsection (iii) will have a bang-bang nature, i.e. depending on the parameters only local supervisors (relative high informational advantage) or the central supervisor (relatively high resolution advantage) will be active. This knife-edge property will disappear in a richer model of the banking market, while the information effect continues to operate. For example, Calzolari and Loranth (2011) provide a framework with a richer infrastructure. In their model deposit insurance is exogenously given and affects regulatory incentives.

The analysis has also abstracted from cross-border collection of deposits, and how such deposit flows might affect supervisory incentives. Obviously, the current argument can be enriched to allow for cross-border competition for deposits. However, the main mechanisms will remain at work even if further channels of cross-border activities are opened up. For the policy debate it seems to me that lending markets are the anchor of all complications. The main supervisory problem arises when banks incur asset problems. It is when depositors sense asset problems that they start running and when systemic events are triggered. Therefore, starting on the asset side, and in particular with the lending business, seems to be the natural way to start the supervisory debate.

5. Conclusion

While the coordination and, hence centralization of resolution seems a prime necessity, there is no economic necessity to centralize supervision. To the contrary, competing supervisory agencies will generate a number of efficiencies, or at least, they will serve other concerns such as diversity and heterogeneity. Multiple supervisory agencies may compete in reputation for doing a responsible job with tax payers' money. Moreover the presence of competing supervisors will exert pressure to make them less prone to political and private capture.

Decentralized supervision, however, will be effective only, if the incentives of the supervisory agencies are well defined. In particular, the fiscal implications of resolutions and the burden sharing of recapitalizations have to be credibly committed ex ante. So there will be no doubt that a potential recapitalization approved by a local supervisor will primarily draw on local funds. Such rules will affect the supervisory conduct and, hopefully, credibly reduce national free-riding on non-specified common resources.

By exploiting more effectively local information, decentralized supervision has the charm of fostering potentially richer business models and, hence, increasing financial diversity. Allowing for more differentiation of business models in a more heterogeneous banking market may be one way to reduce systemic risk by effectively reducing correlation in business models and allowing for more diversification across regions (and business models). Moreover, regional differentiation and financial diversity constitute effective breaks against too-big-to-fail strategies for banks expansion (Goodhart, Wagner, 2012). By standardizing supervision across regions centralized supervision effectively contributes to a more concentrated banking structure in a more homogeneous and less complex banking market, and, thus, inadvertently increases systemic risk by fostering too-big-to-fail strategies (Haldane, May, 2011).

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