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Benefits and Challenges of International Regulatory and Supervisory Cooperation[1]

Introduction

The crisis has brought international financial linkages to the center stage of the economic policy debate. It demonstrated the limitations of a financial architecture in which markets are increasingly integrated and financial institutions operate across borders, but supervision and regulation remain largely nation bound. This regulatory fragmentation has caused problems both before and during the crisis. Before the crisis, it limited the monitoring and understanding of cross-border linkages and hindered efforts to contain growing imbalances. After the crisis started, it led to often locally-driven and globally-inefficient policy actions; especially in the context of bank resolution.

In the euro area, a fragmented supervisory architecture and bank safety net strengthened the link between a country's banking and real sectors and the health of its public finances. During the boom, in several countries, banks grew to a scale that challenged national supervisory capacities. After the bust, the implicit and explicit liabilities associated with the size of these banking systems overwhelmed national fiscal resources.

This has led some observers to the conclusion that (akin to the traditional trilemma of international economics between monetary policy independence, fixed exchange rates, and free capital flows) a "financial trilemma" exists between financial stability, free capital flows, and fragmented regulators and safety nets (Schoenmaker, 2011; Obstfeld, 2014). And it contributed to the reopening of the debate on the role of capital controls (see, for instance, Ostry et al., 2012).

In the euro area, the answer to these challenges has been the nascent banking union based on a Single Supervisory Mechanism (SSM), a Single Resolution Mechanism (SRM), and a agreement for the mutualization of at least a portion of the safety net. At the global level, the response has led to renewed efforts to improve cross-border cooperation and information flows through initiatives such as the Financial Stability Board; but also greater acceptance of capital flow measures as a tool to preserve macrofinancial stability.

That said, regulatory unions present costs and challenges. For instance, it may become harder to tailor policies to an individual country's needs; and it may be difficult to design effective internal governance for a supranational regulator. This begs the question of how far should a banking union extend. Can we achieve enough stability through international cooperation? If not, what are the main factors one should look at to decide whether countries should join into supervisory/regu-

[1] *The views expressed herein are those of the author and should not be attributed to the IMF, its Executive Board, or its management.*

latory unions? And conditionally on a partial union being formed, how do incentives to join in change for the countries left out?

We are very far from a formal theory of what constitutes an optimal regulatory area. What follows in this note are explorations.

Regulatory Externalities

In recent years, technological progress and regulatory changes have led to the progressive integration of international financial markets. As a result, banks'

cross-border activities have become increasingly important, raising new challenges for regulators that have remained country bound. In this environment, prudential regulation and supervision generates cross-border externalities that neither regulators nor the financial institutions they are supposed to oversee might take into account. This section explores the implications of these externalities for the benefits and costs of switching to a centralized supervisory agency. And, in a multi-country setting, it discusses how the formation of a banking union by a subset of countries affects other countries' incentives to join in.

A Simple Theoretical Framework

Here we follow the stylized model proposed in Dell'Ariccia and Marquez (2006). Consider a setup in which banks compete internationally, but are regulated and supervised by domestic agencies. These domestic regulators/supervisors' mandate includes domestic financial stability and bank profitability. The latter may be the reflection of regulatory capture or more generally of the fact that supervisors care about all domestic stakeholders in the banks. Critically, this entails a tradeoff. Tighter regulation/supervision will make the domestic banking system safer. But it will represent somewhat of a burden for the banks and reduce their profitability. Further, since banks compete internationally, these policy actions will entail externalities. Safer banks at home will improve stability abroad (for instance, by reducing counterparty risk). But more intrusive regulation and supervision may decrease bank competitiveness vis-à-vis foreign institutions, increasing its impact on bank profits.

Under these assumptions, domestic agencies acting independently (uncooperatively) are likely to reach an inefficient outcome. In this model, both externalities tilt regulators' behavior in the direction of laxer standards. Indeed, each domestic agency will not take into account the benefit that tighter standards bring to the other country (through its banks' interaction with a safer banking system). But they will be concerned with the increased negative effect that tighter standards have on domestic banks' profits because of the loss of international competitiveness. The outcome (in a Nash equilibrium) is one with excessively lax standards: a race to the bottom; or, more precisely, standards that are laxer than those that would prevail if the two domestic agencies were to fully take into account the cross-border effects of their policies.

Now compare this setup (in which national agencies concerned solely with their respective domestic banking system set policies non-cooperatively) to one in which an international regulator sets uniform standards for all banks. The benefit of centralizing regulation is that it internalizes any externalities that may exist due to the integration of financial systems. From that standpoint, it is immediate from the discussion above that a centralized agency will impose tighter standards than independent regulators. The shortcoming is that centralization reduces flexibility in designing policy; at least to the extent that political economy considerations limit the regulator's ability to tailor standards to individual countries under its jurisdiction. Then, there is a cost, if regulatory needs (and thus the optimal policy design) differ across markets because of institutional and structural reasons.

Under these assumptions, a banking union is more likely to emerge (to offer a Pareto improving solution) between countries that exhibit a greater degree of financial integration and relatively similar regulatory needs. The degree of inefficiency under the "independent" solution is likely to increase with financial integration. And the cost of switching to a centralized agency is likely to be smaller when country needs are not too far apart. In practice, this means that a banking union is more likely to be beneficial (and politically acceptable) among countries with a greater foreign bank presence, cross-border flows, etc.; and countries with relatively similar financial structures in terms of bank design (for instance universal banks versus narrow banks) and market structure.

Incentives to Join Partial Unions

The model also speaks to the incentives to form of a banking union among a subset of countries when multiple financial linkages exist, and to how the formation of such a union changes the incentives to join for those left out. Relative to the simpler two-country case discussed above, the analysis of a multi-country setting offers two additional insights.

First, the formation of a union among any country pairs is affected by the existence of financial links with other countries. As discussed above, the main benefit of joining a union is that the centralized agency will take into account regulatory externalities and, hence, standards will be tighter than under independent domestic supervisors. However, in the presence of financial linkages with "third-party" countries, this benefit will be tempered by a decrease in bank competitiveness vis-à-vis financial institutions from countries that did not join the union. This means that the existence of financial linkages with multiple countries makes the formation of unions among a subset of partners more challenging.

Second, the formation of a union among a subset of countries reduces the incentives for those left out to join it. The intuition is immediate from the forces in this model. The union will reduce the race to the bottom among participating countries and tighten their standards. This reduces the potential benefits from joining in for those outside.

In practice this means that countries that have strong financial linkages with third-party countries will find joining a partial union less attractive. Further, from the limited point of view of a model based on regulatory externalities, a partial union does not necessarily represent a pole of attraction that will naturally evolve in a more comprehensive one.

Limitations of the Analysis

The analysis in this section focuses solely on issues of regulatory externalities and coordination. It does not take into account other benefits of banking unions such as crisis management (avoiding sovereign-bank doom spirals, limiting inefficient ring fencing, and improving cross border resolution) and regulatory capture discussed in the next sections.

Second, as for any other framework, the results critically rely on one buying the building assumptions in the model. In particular, the objective function of the regulators, the idea that a centralized agency would find it challenging to tailor policy asymmetrically across its jurisdiction, and the sign of the main externalities. While we find the assumptions reasonable and the results relatively robust, there are obviously possible exceptions. For instance, regulators could be interested in the total amount of credit provided to the economy. If so, tighter standards abroad would lower rather than increase the domestic regulator's utility. Yet, as long as this effect is not too strong (as long the supply of credit has a small enough weight in the regulators' utility function) the results discussed above hold.

Similarly, the assumption that a centralized supervisor/regulator would have to impose the same regime across all countries participating in the union seems a very strong one, but results are relatively robust to its relaxation. All that is needed for the model's predictions to hold is that a centralized agency would have less leeway than independent regulators in imposing asymmetric requirements across countries. Political economy considerations suggest that this would likely be the case. One could challenge the idea that independent supervisors with asymmetric objective functions cannot coordinate their actions to achieve a better equilibrium (put differently, one can question whether Nash equilibria are the right analytical framework in this context). This is a relevant issue and, in practice, domestic agencies do cooperate across borders. However, it is also true that this cooperation is often fragile and put to the test during crises (when it matters the most). Further, while certain aspects of the relationship between independent agencies can be agreed and contracted upon, others – think about the exchange of high quality informal information (Holthausen and Rønde, 2004 and Calzolari and Loranth, 2011) – are much harder to enforce. For these, uncooperative solutions are likely to remain the appropriate theoretical benchmark.

Finally, the simplified framework discussed here is consistent with an economy in which national regulators have an impact on a bank's stability and its international competitiveness, but no direct control over foreign banks. This is obviously the case in a system where foreign affiliates are subject to "home country regulation," and for direct cross-border lending. But it does extend to "host country regulation," (meaning that domestic regulators have authority over all banks operating in their jurisdiction) to the extent that there is not a one-to-one matching between a domestic bank's foreign loans and foreign-raised deposits and capital. That is as long as regulatory conditions at home affect the competitiveness of a bank's foreign subsidiaries (Dell'Ariccia and Marquez, 2006, for further discussion).

Crisis Management

The experience during the crisis highlighted a host of additional issues associated with fragmented bank jurisdictions. Some of these aspects (such as the lack of a common safety net) were particularly evident within the common currency area. But others (such as limited cooperation in cross-border supervision and resolution) had broader reach. Here we focus primarily on the effects of fragmentation on the development of sovereign-bank spirals (for a discussion, see Bolton and Jeanne, 2011; Acharya et al., 2013; Farhi and Tirole, 2014) and on the challenges fragmentation represents for cross-border bank resolution.

Sovereign/Bank/Real-Sector Spirals

Before the crisis, the common currency and single market promoted financial integration in the euro area and EU. Banks and other financial institutions progressively established affiliates and operated with relative ease across borders; credit flows allowed savings to be reallocated across countries; and financial portfolios became increasingly more diversified. The interbank market functioned smoothly, with relatively uniform interest rates across the euro area. And the monetary policy transmission mechanism worked efficiently, with policy rate movements quickly translating into changes in bank lending rates.

This growth in financial integration had also a darker side, as large capital flows across euro area countries allowed for the buildup of sovereign and private sector imbalances. In several countries, these imbalances manifested in credit booms (mostly funded through capital inflows) which fueled and were supported by booming house prices and buoyant real estate activity (these would later contribute greatly to the cost of the crisis). But, at the time, the "incomplete" financial architecture based on a single currency and common market, but national-based financial safety nets, bank supervision and regulation seemed to serve the euro area well.

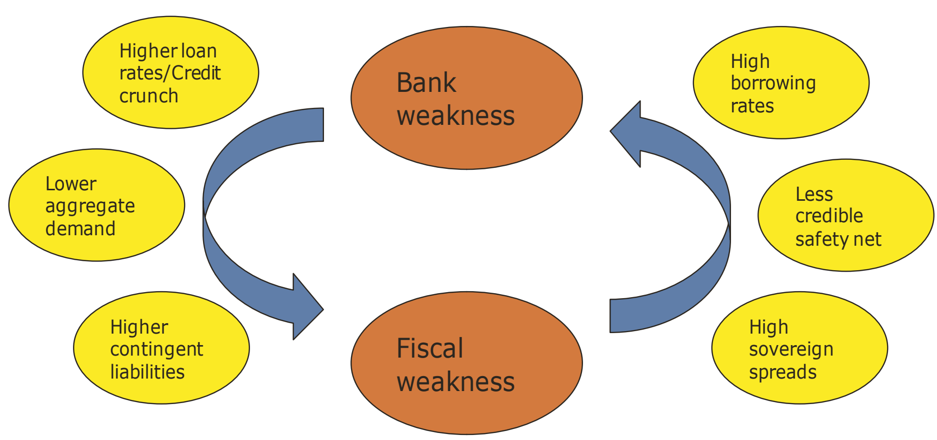
The crisis laid bare the tensions inherent in this institutional design. Sovereign/bank/real-sector vicious spirals emerged that imparted procyclicality to local lending conditions and impaired the monetary policy transmission mechanism. Even within a single monetary and fiscal jurisdiction, local conditions will have a tendency to exhibit procyclicality during distressed times, to the extent that bank portfolios are regionally specialized. A negative regional shock to the real sector will reduce borrowers' creditworthiness and increase the risk of local lending. Banks with portfolios concentrated in the region will becomes riskier and their cost of funds will increase. The subsequent increase in local rates will further hinder real activity and so on.

However, in a single country setting, two elements intervene to stop or at least contain this spiral. First, a nationwide safety net will assuage the concern for regional bank stability (think about what would have happened during the crisis if the states of California or New York had had to be responsible for bank stability). Second, should the crisis be broader than regional, and potentially bring the public sector into the spiral, monetary policy can intervene (at least to some extent) to control interest rate conditions.

In contrast, the pre-crisis euro area's financial architecture strengthened the link between a country's banking and real sectors and the health of its public finances; in particular for countries with weak fiscal positions and/or very large banking systems (relative to GDP). In fiscally weak countries, the soundness of national-based bank backstops came into question. Banks became increasingly perceived as vulnerable which led to rising bank funding costs and lending rates. This, in turn, hindered real activity, further damaging public finances. In countries with large banking systems, bank distress overwhelmed national fiscal resources (again the effect of national-based fiscal backstops) directly, through explicit and implicit public guarantees, and indirectly, through its effect on real activity.

Chart 1

Sovereign/Bank/Real-Sector Spirals

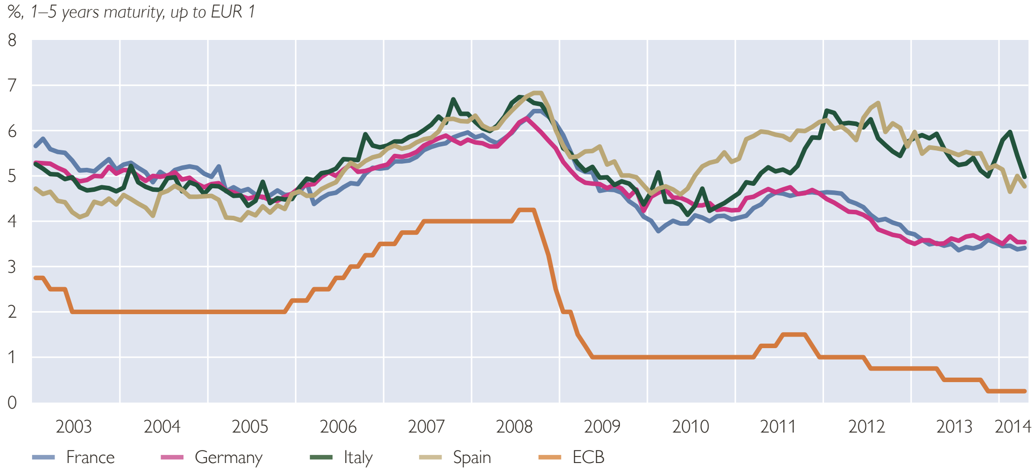


Source: Author's illustration.

Chart 2

Lending Rates and ECB Policy Rate

%, 1–5 years maturity, up to EUR 1



Source: ECB.

An Impaired Monetary Policy Transmission Mechanism

The inability to control local interest rate conditions, because of centralized monetary policy exacerbated the problem. The interaction of bank and sovereign weakness described above led to increasingly fragmented financial markets. In certain countries, banks and at times the sovereign found themselves rationed out of lending markets. The result was an inversion of the pre-crisis trend of increasing financial integration. Financial intermediaries retrenched in their home markets (in some cases partly responding to regulatory pressures-ring fencing) and bank spreads started to differ markedly across borders.

Bank lending rates (which until mid-2010 had co-moved closely across euro area countries started to differ. And notwithstanding the ECB's aggressive policy easing, monetary conditions in distressed economies such as Italy and Spain remained relatively tight (and actually moved in the opposite direction for a while). Indeed, there is evidence that the pass-through of the policy rate onto bank lending rates (especially for small business lending) dropped dramatically in the countries hardest hit by the crisis, while remained roughly stable in others (Al Eyd and Berkmen, 2013).

Challenges in Cross Border Resolution

The crisis also demonstrated the challenges associated with intervening and resolving large multinational institutions in a system of independent supervisors and regulators. National authorities mandated to protect domestic stakeholders may fail to coordinate with the necessary speed on globally optimal solutions. The likely outcome is a financial system which is at the same time less stable and potentially more expensive from a fiscal standpoint (IMF, 2010; see also Basel Committee on Banking Supervision, 2010).

Relative to a centralized system with a unified resolution framework, uncoordinated actions by national authorities may inadvertently hasten the failure of a multinational financial institution in a way that fails to preserve value. Local jurisdictions can engage in activities such as ring fencing that, while optimal from an individual country's standpoint, are detrimental to the stability and franchise value of the overall financial institution (think, for instance, to a local host supervisor requiring a transfer of assets to cover the liabilities of a branch without taking into account its implication for the stability of the parent institution). Similarly, uncoordinated local liquidation proceedings may prevent the efficient transfer of assets and liabilities across sections of a distressed institution that operates under different jurisdictions. Put differently, cross-border resolution is not necessarily a zero-sum game, and the focus of national authorities on domestic stakeholders can prevent cheaper and more effective coordinated solutions.

Finally, even in cases when policy actions are eventually the right ones, ex-ante uncertainty as to how and whether national authorities will coordinate their moves may lead to, otherwise avoidable, panics and contagion. And the need for multiple supervisory agencies to agree on a course of action makes it difficult to move quickly, which in turns jeopardizes any strategy that seeks to both preserve value and limit contagion.

The challenge of coordinating a resolution strategy across borders is likely to lead national authorities to opt for more lenient and fiscally expensive options. For instance, the concern for contagion, absent a prompt and transparent strategy to bail-in shareholders and unsecured creditors, is likely to make the bail-out option more attractive. Further, an uncoordinated approach may not maximize the value of a cross-border financial institution, thus increasing the total fiscal cost of its failure. For example, it may be more effective (more attractive to eventual investors) to break up a financial group operating in numerous jurisdictions across business rather than national lines. But uncertainty about valuations and the difficulty in establishing compensatory side payments may mean that independent national authorities will opt for the former.

The crises of Lehman and Fortis provide stark examples of these challenges. They illustrate how national interests can become paramount during crises and hinder cross-border cooperation, even between jurisdictions whose financial regulators have a long tradition of co-operation and whose legal frameworks are considerably harmonized. Fortis was resolved along national lines in a protracted process that failed to preserve franchise value. In the case of Lehman, insolvency officials in different jurisdictions wound down various international components of the group with little or no coordination (IMF, 2010).

Other Inefficiencies

A fragmented supervisory structure entails additional inefficiencies. First, local agencies may lack the resources and sophistication to properly monitor the activities of large multinational banks operating in or from their jurisdiction (especially, in the case of smaller countries); although, the potential loss of local expertise in switching to a centralized system may represent a countervailing element.

Second, local agencies may be more subject to issues associated with "too big to fail" institutions and "national champions". Banks that are considered large and systemic at an individual country level may not be so in the context of a larger cross-border market. This is likely to reduce moral hazard behavior associated with the perception of laxer supervisory standards and the expectation of bail-outs. Evidence from the United States suggests that this may be the case. Comparing federal and state regulator supervisory ratings within the same bank, federal regulators appear to be systematically tougher, downgrading supervisory ratings almost twice as frequently as state supervisors (Agarwal et al., 2014).

How Can a Banking Union Help?

A well-designed banking union can help address the tensions discussed in the previous sections. To be effective on all these fronts, the new institutional framework has to comprise three elements: a single regulatory and supervisory framework, a single resolution mechanism, and a common safety net. In this context, Europe is moving in the right direction and (given the institutional constraints) at a commendable speed. There are of course implementation challenges related to putting into practice effective common supervision and resolution. It is essential also to avoid stalling on reforms. In this regard, agreeing on a framework and timetable for common safety nets and backstops is critical.

Indeed, all three elements are necessary (at least for countries belonging to the euro area). A single supervisory agency without a common safety net framework may help with externalities (see section above) and reduce the risk of regulatory capture, but will do little to break the vicious circle between banks and sovereigns and reestablish a properly functioning monetary transmission mechanism. And supervision requires a credible resolution framework to be effective (not only to allow for timely decision-making during crises, but also to provide supervision with "teeth" during tranquil times). In turn, bank recapitalization as well as resolution and deposit insurance mechanisms would lack credibility without the assurance of fiscal backstops and burden sharing arrangements. Finally, common safety nets and backstops without effective supervision and resolution would break sovereign-bank links, but risk distorting incentives, reinforcing tendencies for regulatory forbearance, and shifting losses to the euro area level. In short, power and resources have to go hand in hand.

For countries that retain an independent monetary policy sovereign-bank spirals are a less pressing concern (although, they come back to center stage for systems with a high degree of liability dollarization). And, while other shortcomings of uncoordinated regulation and supervision policies remain, for these countries the choice between independent and centralized regulators is less clear cut. Indeed, a centralized supervision, resolution, and safety net framework also entails costs and challenges. An important one we discussed before: A common agency will find it more difficult to tailor policies to individual countries under its jurisdiction. In this regard the current European design attempts to strike a balance between common supervision and local flexibility by leaving smaller banks under the responsibility of national authorities and allowing some leeway in the use of certain regulatory tools (see, for instance, the treatment of macroprudential measures).

Another important implementation challenge relates to the internal governance of a centralized agency; especially one organized around a hub-and-spokes model. Internal mechanisms will have to be devised to guarantee that the spokes, which (at least in a transition period) may have different objective functions from the hub, act accordingly to the centralized mandate, including with regard to information collection and exchange (Holthausen and Rønde, 2004). Finally, there can be unwanted side effects. Financial institutions and their relationship with the real sector will evolve with the new regulatory structure. This may lead to even greater imbalances. For instance, countries may be able to run even larger

current account deficits once banks are protected by a common fiscal backstop; or banks may grow even larger in the attempt to become "too big to fail" at the supra-national level. Vigilance and new policy tools (such as those classified as macroprudential) may be required to limit these risks.

Conclusions

We are still very far from a comprehensive model that could guide the choice between a system of independent regulators and a supervisory and regulatory union. However, the trade-offs discussed in this note provide some insights on what country characteristics are likely to shift the balance between the costs and benefits of joining a union.

Countries that are more financially integrated with each other; in particular through cross-border bank lending

and a significant presence of foreign banks in their domestic banking system are more likely to benefit from coordination. At the same time, however, close links with third party countries that would not be part of the union will tend to limit those benefits.

Countries belonging to a currency union would benefit from an overlapping jurisdiction on the regulatory front. A benefit that may extend to banking systems characterized by widespread balance-sheet "dollarization" (meaning asset and liabilities denominated in the currency prevalent in the banking union) and countries with hard pegs.

Regulatory unions will likely be less challenging when member countries share similar financial structures and, hence, have roughly similar supervisory and regulatory needs. The costs associated with decreased policy flexibility will be greater when financial institutions and markets differ substantially across members.

Finally, the implications of political economy considerations are less clear cut. Smaller countries (especially those with large banking systems) may reap relatively greater benefits from joining a union in terms of reduced "capture" and "too big to fail" problems and greater risk sharing on the fiscal backstop front. However, these are also countries that may have less influence on the decisions of the union as a whole. So the appeal of membership might depend critically on the union internal governance rules.

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