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The Asymmetric Implementation of the European Banking Union (EBU): Consequences for Financial Stability

Abstract

EU Member States outside the Eurozone are hesitating to enter the European Banking Union (EBU) and to establish “close cooperation” in bank supervision with the ECB. This paper analyzes the consequences of such asymmetric integration for financial stability in Europe. It argues that the main obstacles against establishing close cooperation are a lack of voting rights and insufficient access to the fiscal backstop provided by the European Stability Mechanism (ESM). The paper presents arguments as to why international cooperation in bank supervision could be welfare improving, if multinational banks are dominant. It also discusses suitable reform options for making it more attractive for EU Member States to begin a close cooperation with the ECB.

Keywords: multinational banking, capital requirements, bank resolution, regulatory arbitrage
JEL: G38, G21, F36

Introduction

European economic integration is proceeding distinctly asymmetrically. So far, only 19 of 28 Member States of the European Union (EU) have introduced the Euro as their national currency. Seven EU Member countries will join the European Monetary Union (EMU) in future. The two remaining countries, Denmark and the UK, may opt-out and

will probably never enter the EMU. None of the EU member countries outside the Eurozone have joined the European Stability Mechanism (ESM), although some have ratified the fiscal compact and have included a debt brake into their constitutions (see Table 1).

The European Banking Union (EBU) is a further step in the integration process which has not yet been followed by all EU Member states. Member countries of the European Monetary Union automatically also become members of the EBU, while EU Member countries outside EMU are not eligible to join the EBU. However, these countries may – after notification of a request to the European Central Bank (ECB) – establish “close cooperation” with the ECB and participate in the mechanisms offered by EBU [European Central Bank, 2014a].

Bulgaria and Romania intend to enter the EMU – and thus also the EBU – as soon as possible, but a date is currently not foreseeable. Denmark also intends to establish “close cooperation” with the ECB, although it will not join the Eurozone [Danmarks Nationalbank, 2014a, 2014b]. In contrast, Sweden and the UK have decided not to enter the European Banking Union in any case. The remaining four countries, namely Croatia, the Czech Republic, Hungary, and Poland, have to fulfil the Maastricht convergence criteria and must enter the European Monetary Union. However, they are currently adopting a “wait and see” approach with respect to EBU and leaving it open as to whether or not and when they will establish “close cooperation” with the ECB.

TABLE 1. Integration of EU-9 (Non-Eurozone) Member Countries

Country	European Monetary Union (EMU)	Fiscal Compact	European Stability Mechanism (ESM)	European Banking Union (EBU)
<i>Bulgaria</i>	No	Yes	No	Admission likely
<i>Croatia</i>	No	No	No	“Wait and see”
<i>Czech Republik</i>	No	No	No	“Wait and see”
<i>Denmark</i>	Opt-out	Yes	No	Admission likely
<i>Hungary</i>	No	Partially	No	“Wait and see”
<i>Poland</i>	No	Partially	No	“Wait and see”
<i>Romania</i>	No	Yes	No	Admission likely
<i>Sweden</i>	No	Partially	No	Opt-out
<i>United Kingdom</i>	Opt-out	No	No	Opt-out

SOURCE: European Commission [2013a]; European Parliament-Directorate General for Internal Policies [2013]; European Central Bank [2013].

Conventional economic wisdom sees financial integration as having both stabilizing and destabilizing effects on financial markets [Allen et al., 2011]. The stabilizing effects stem mainly from the fact that banks may be able to diversify their asset portfolios across borders and thus are better able to absorb country-specific shocks. The destabilizing effects

result from increased risk-taking and financial contagion, because regional shocks may spread quickly across financial markets. As financial integration deepens, it is expected that the stabilizing effects will outweigh the destabilizing ones, but only provided financial integration is complete and symmetric.

Under incomplete or asymmetric financial integration, however, the destabilizing effects could become more important.² This became evident during the recent financial crisis in Europe when highly integrated interbank markets coexisted with still fragmented markets for retail banking. This mismatch in financial market integration had several consequences. First, due to insufficient competition within the banking sector, “related lending” continued to dominate and local banks used their improved access to interbank lending to increase lending to favoured domestic sectors such as real estate. Second, as banks did not increase their long-term lending from abroad, the composition of their foreign liabilities became short-term and debt-based. They thus depended excessively on foreign interbank lending, which could quickly dry up at the first sign of distress. Finally, as foreign liabilities were not equity-based, banks could not share the subsequent losses with other jurisdictions. When the crisis started, the cost of repairing their balance sheets devolved largely on their domestic fiscal authorities, and this resulted in the infamous bank-sovereign nexus [Draghi, 2014].

In this paper, we do not consider fragmented financial product markets, but focus on the consequences of incomplete regulatory integration within a common market. In particular, we are interested in the consequences of the asymmetric implementation of the EBU for financial stability in Europe. We know from other policy areas, such as environmental policy, that cross-border economic activities cause substantial coordination problems between jurisdictions, and provide a reason for the creation of a supranational regulator. Cross-border financial activities are particularly relevant between the Eurozone and the four Central and East European countries outside EBU (subsequently called CEE countries, CEECs, or “opt-in countries”). Here, the domestic banking sector is dominated by multinational banks which offer financial services mostly through subsidiaries [Allen et al., 2011; Beck et al., 2013; Davas, Wolff, 2013]. We focus on two types of coordination failures that result from “regulatory arbitrage” and from the difficulties of resolving a multinational bank. These failures endanger financial stability, because they could lead to a “race to the bottom” in bank supervision and to “ring-fencing” in bank resolution.

Since the EBU has only just started to operate, it is not possible to present direct evidence on the consequences of the asymmetric implementation for financial stability in Europe. We thus have to take a different approach and use the results of the existing theoretical literature on the nexus between national bank regulation, cross-border financial flows, and financial stability. While this literature is not calibrated to the EBU, it nevertheless provides some arguments as to why the delegation of responsibilities in bank supervision to a supranational body makes sense, in particular with respect to the opt-in countries. These arguments, however, must be balanced against some difficulties faced by opt-in countries,

when establishing close cooperation with the ECB. We discuss such difficulties below. Here, the Polish position is of particular significance, not only because Poland is the largest economy among CEECs, but also because the other countries, Hungary in particular, will follow the Polish decision, in order not to endanger the competitiveness of the domestic banking sector [Kisgergely, Szombat, 2014].

The remainder of the paper is structured as follows. The first section describes the central elements of the European Banking Union. The second section presents the main reasons why some countries at present are hesitating to enter the EBU. The third section discusses possible consequences of this decision for financial stability within the EU. The fourth section considers which institutional changes might be capable of increasing the attractiveness of EBU for the opt-in countries. The final section concludes.

Key Elements of the European Banking Union (EBU)

The European Banking Union consists of a “Single Rule Book” and three additional elements [International Monetary Fund, 2013]. They comprise:

- the “Single Supervisory Mechanism” (SSM) of the ECB;
- the “Single Resolution Mechanism” (SRM) for systemically important financial institutions (including the “Single Resolution Fund“, SRF, financed by a bank levy); and
- the “European Deposit Insurance System” (EDIS).

The Single Rule Book is actually not part of the EBU since it applies to all 28 Member States of the European Union. It codifies unified rules for bank supervision and obliges every EU Member State to legislate national bank resolution schemes. Moreover, it mandates all member countries to set up a national bank resolution fund and a national deposit insurance fund as well.

The purpose of the three main pillars of the EBU is firstly to transfer national supervisory competences to the European level, in particular to the European Central Bank (ECB), and secondly to merge national bank resolution and deposit guarantee funds into a single European fund. These measures are mandatory for all EBU Member States, but EU Member States outside the Eurozone may establish “close cooperation” with the ECB; the decision is taken by the ECB. In the case that “close cooperation” is established, the non-Eurozone country automatically becomes a member of both the SSM and the SRM. The precondition for such an “opt-in” is that the country has previously adapted its national banking laws and in particular, has allowed its bank regulatory authorities to cooperate with the ECB. After establishing “close cooperation”, member states must provide the ECB with all information on the supervised banks established within their territory. Furthermore, the relevant national competent authorities must adhere to any instructions, guidelines or requests issued by the ECB. After three years, an opt-in country may terminate the close cooperation; termination by the ECB is possible any time.

The first pillar of the EBU is the “Single Supervisory Mechanism” (SSM), which allocates supervisory responsibility for all systemically important banks within the Eurozone from the “National Competent Authorities” (NCAs) to the ECB. The SSM covers all large banks with total balance sheet assets exceeding 30 bn. Euros or more than 20 percent of the GDP of their home country (at least 5 bn. Euros). In any case, the ECB must directly supervise at least the three largest banks in every member country. In addition, banks that receive financial assistance from the European Stability Mechanisms (ESM/ESFS), and multinational banks with cross-border activities, can also be declared systemically important and thus supervised by the ECB. Smaller and less significant banks are still supervised by National Competent Authorities. The SSM is thus comparable to the Eurosystem, a system of supervisory authorities, comprising the ECB and the national supervisors [Deutsche Bundesbank, 2013; European Commission, 2013b; European Central Bank, 2014b].

Within the SSM, micro-prudential decisions are prepared by the “Supervisory Board”, which is part of the European Central Bank. The Supervisory Board comprises of the President of the ECB, the Vice-President, four more representatives of the European Central Bank, and a representative of national competent supervisory authorities from each Member State participating in the SSM. Formally, decisions are taken by single majority; each member has one vote, but that of the President is decisive in cases of a tie of votes. The Supervisory Board, however, is not the ultimate decision-making body of the ECB; the Supervisory Board’s draft decisions are presented to the Governing Board of the ECB and be considered as adopted only if the Governing Council does not object within a specified period of time.³

The “Single Resolution Mechanism” (SRM), the second pillar, came into operation in early 2015. Basically, a bank resolution scheme allows supervisors to remove property rights from bank owners and to reorganize or liquidate the bank before balance-sheet insolvency has occurred. This is expected to help avoid contagion and reduce systemic costs after a bank failure. The SRM consists of two parts, an “institutional framework” and a “financial fundament” [European Commission, 2014b]. The institutional framework comprises a bank resolution authority (“Single Resolution Board”, SRB), a fully independent authority of the European Union and financed by contributions from the banking sector.⁴ Upon notification from the ECB that a bank is failing or likely to fail, the Board will prepare and implement the restructuring or resolution of the ailing institution. The Board also decides whether resources from the “Single Resolution Fund” are to be used for resolution. The Board is responsible for all banks supervised by the European Central Bank, i.e., all systemically important banks and all multinational banks. The resolution of smaller banks has to be carried out by the national resolution authorities, which also assist the SRB in fulfilling its tasks.⁵

The “Single Resolution Fund” (SRF) forms the financial fundament of the resolution mechanism. The SRF is part of a statutory “bail-in mechanism”, which follows a specific pecking order, when it comes to financing bank resolutions. This is intended to prevent

tax-payer money from being used for bank resolution. If a bank gets into financial difficulties, its shareholders and subordinated and senior creditors will be called on first to bear the cost of winding up the troubled bank. Their contribution must cover at least 8 percent of the bank's total balance sheet assets. Certain liabilities, such as legally guaranteed deposits and secured debt, however, are exempt from the bail-in. This also holds true for interbank claims which represent a large part of cross-border financial flows within Europe [Deutsche Bundesbank, 2014].

The Single Resolution Fund will be used only after the liability cascade and the bail-in mechanism have ended. Without private loss-sharing, the contributions from the resolution fund are limited to five percent of the bank's total balance sheet assets. The Fund will be built up within eight years and be administrated by the SRB. The ultimate capacity will comprise 1% of all insured deposits, which will amount to 55 bn. Euros given the current state of total deposits within the Eurozone. The Fund will be financed by a bank levy which has to be paid by all banks within the European Banking Union. As long as the common European Resolution Fund has not yet been implemented, the financial fundament of SRM starts with a system of national resolution funds which are financed by national bank levies. Starting in 2016, these levies will be transferred to national compartments within the SRF, where they will be merged progressively into a single mutualized fund; lending between the national funds will be possible [European Commission, 2014a; Narodowy Bank Polski, 2014].

The "Single Resolution Board" also prepares the resolution of multinational banks, comprising a bank holding company and (domestic and foreign) subsidiaries. Two alternative resolution strategies can be used, namely a single-point-of-entry (SPE) resolution or a multiple-point-of-entry (MPE) resolution. Under the former approach, the resolution procedure is executed by the authority of the country where the multinational bank's holding company is located. The resolution procedure is carried out top down that is beginning with the holding company, independently from where the problems originate. In such cases, the financial burden is carried by stakeholders of the home-country where the bank holding-company is located. In contrast, under a multiple-point-of-entry (MPE) approach, the authorities from the host country of the multinational bank's subsidiaries are in charge of the resolution procedure. This implies that stakeholders in the host-countries where the subsidiaries are located carry the financial burden [Faia, Weder di Mauro, 2015]. The EBU basically stipulates the application of the SPE approach for multinational bank located within EBU Member States. If the resolution of a multinational bank with subsidiaries located in countries outside EBU becomes necessary, the SPE approach could also be used, if the NCAs from all countries agree. If this is not the case, the MPE approach is applied.

The "European Deposit Insurance Scheme" (EDIS) represents the third pillar of EBU.⁶ Within the European Union, bank deposits up to 100.000 Euros are currently insured by national deposit insurance schemes (DGS). They will gradually (step-by-step) be transferred

into a common single deposit guarantee scheme. This scheme will evolve in three steps, starting with a reinsurance scheme which will last until 2020. During the re-insurance phase, a national DGS can access EDIS funds only after its own resources are exhausted, and the EDIS will provide extra funds only up to a certain level. During a co-insurance phase starting in 2020, the EDIS would become a progressively mutualized system, meaning that a national scheme would not be required to exhaust its own funds before accessing EDIS funds. As of 2024, the EDIS will fully insure national deposit guarantee schemes [European Commission, 2014b].

Impediments to EBU Membership

As mentioned before, four EU Member States are currently reluctant to establish “close cooperation” with the ECB. The main reasons are in particular, insufficient voting rights and a lack of access to the fiscal backstop provided the European Stability Mechanism (ESM) [Kisgergely, Szombat, 2014; Narodowy Bank Polski, 2014].

- Micro-prudential decisions within EBU are taken by the ECB’s Governing Council, where the non-Eurozone countries have no voting rights. Decisions taken by the ECB’s Governing Council about a bank from an opt-in country have to be reconfirmed by the country’s national supervisory authority. If the national authority objects, it may inform the ECB that it will not be bound by the decision and give the reasons why it does not agree. Close cooperation has to be terminated immediately, if the National Competent Authority objects to the Governing Council’s decision; after termination, the National Competent Authority is no longer bound to the decision. A suspension of the decision and continued participation in the Supervisory Board is not possible. Once close cooperation with the ECB is established, an opt-in country would entirely lose supervisory control over the three largest domestic banks and over the domestic subsidiaries of foreign-owned multinational banks. They will be supervised by the “Supervisory Board” (including representatives from opt-in countries) and the ECB Governing Council (without representatives from opt-in countries). In the case of Poland, that means around two thirds of the Polish banking sector (in terms of bank assets) would be supervised by the ECB [International Monetary Fund, 2015]. In turn, however, an opt-in country will partly gain control over the headquarters of foreign multinational banks and is authorized to send delegates to the “joint supervisory teams”.
- National Competent Authorities in principle retain the responsibility for macro-prudential policies, but the ECB may specify more stringent measures from the harmonized macro-prudential toolkit. In particular, the ECB may apply higher countercyclical capital buffers for minimum capital ratios than those set by national authorities and demand more stringent measures aimed at reducing systemic risk. Moreover, the ECB has to be informed in advance if a National Competent Authority intends

to introduce a new macro-prudential instrument; the national authority must consider suggestions and objections of the ECB regarding the calibration of these tools. On the other hand, a National Competent Authority is entitled to propose to the ECB that it applies more stringent macro-prudential tools, in order to address specific problems in the financial system.

An opt-in country may in consequence expect tightened macro-prudential supervision, if the ECB considers this as appropriate from the viewpoint of the whole Eurozone, even if this is not reasonable from the viewpoint of the competent supervisory authorities from opt-in countries. While this kind of “one size fits all-problem” exists in principle for all Member States of the EBU, it is particularly pressing for banks from the opt-in countries. They do not have access to liquidity assistance from the ECB or from the EMS which is open only to banks from Member States of the Eurozone.

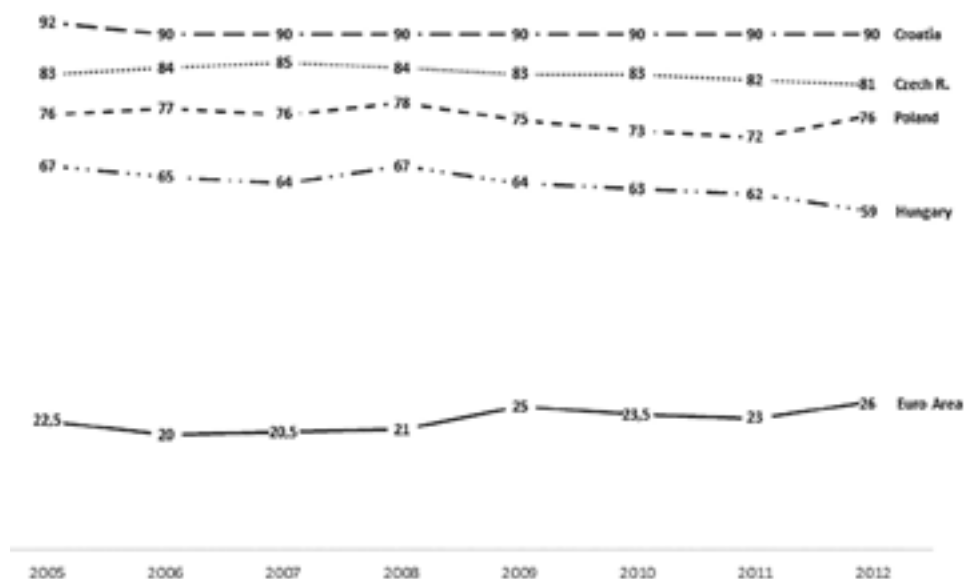
- Notwithstanding the fact they are not full members of the EBU, banks from the opt-in countries have to pay “ex-ante” contributions to the European Bank Resolution Fund, which became fully operational in 2016. It will be used to finance the costs of a bank-resolution procedure. As mentioned before, the fund will be built up over a period of eight years to reach a target level of at least 1% of the covered deposits of all credit institutions authorised in all the participating member states. Contributions remain with the Single Resolution Fund, even if an opt-in country decides to terminate close cooperation with the ECB. In this case, opt-in countries are entitled to demand repayments, but the SRF decides about the timing and the size of repayments. If repayments are delayed, the opt-in country could be forced to build up a new national resolution fund within a short period of time, in order to be able to execute a necessary domestic bank resolution procedure.
- Banks in CEECs dispose of only small amounts of “bail-in-able” debt, which could be used in the event of a bank liquidation. Therefore, authorities in opt-in countries wish to have better access to the fiscal backstop provided by the ESM which is, however, possible only for Eurozone member countries. Non-Eurozone opt-in countries are not eligible for direct bank recapitalization from the ESM. In addition, banks from an opt-in country do not automatically receive access to Euro liquidity through, for example, currency swaps with the ECB.

From the perspective of most opt-in countries, these concerns are only partly counterbalanced by the advantages of EBU membership, which may result from the higher professional reputation of the ECB as a supervisory authority. This argument, however, may not weigh much, because the mechanisms used under EBU will have to establish their own credibility [Kisgergely, Szombat, 2014].

Consequences for Financial Stability

Given such concerns against full EBU membership in some EU Member countries, it is necessary to consider the consequences of an asymmetric integration for financial stability in Europe. Of course, financial markets in most EU Member States outside the European Banking Union are rather small, with the UK being a notable exception, so that potential distortions might not be overwhelmingly large. On the other hand, as already mentioned, multinational banks dominate banking sectors in the four CEE countries under consideration, so that the need for harmonization is larger than for other countries within the EBU [Allen et al., 2011; Beck et al., 2013; Davas, Wolff, 2013; Narodowy Bank Polski, 2014].

FIGURE 1. Foreign banks as percent of total number of banks in Croatia, Czech Republic, Poland, Hungary, and the Euro area (2005-2012)



Note: A foreign bank is a bank where 50 percent or more of its shares are owned by foreigners.

Source: World Bank, retrieved from FRED, Federal Reserve Bank of St. Louis <https://research.stlouisfed.org/fred2/series/> accessed: May 10, 2016.

Figure 1 presents the share of foreign banks in the total number of banks in Croatia, the Czech Republic, Poland, Hungary, and (as a benchmark) in the Euro area. Multinational banks are far more dominant in CEE countries than in the Eurozone. It is further

illustrated by Table 2 which exhibits banks' cross-border assets as the percentage of total bank assets for six CEECs. On aggregate, 70% of all bank assets are cross-border claims, with 65% from foreign subsidiaries and the rest from branches. Parent banks of the overwhelming majority (60%) of subsidiaries, are located in the EBU area.

TABLE 2. Cross-border assets as percent of total assets in the banking sectors of CEE countries (end of 2014)^{a)}

Country	Cross-border assets	Branches	Subsidiaries	Subsidiary parent bank location		
				Euro area	EU outside Euro area	Non EU
	(1) = (2) + (3)	(2)	(3) = (4) + (5) + (6)	(4)	(5)	(6)
Bulgaria	77%	7%	71%	58%	12%	1%
Czech R.	88%	10%	78%	77%	0%	1%
Croatia	80%	0%	80%	78%	0%	2%
Hungary	45%	7%	39%	37%	0%	2%
Poland	66%	2%	64%	58%	0%	6%
Romania	69%	9%	60%	55%	2%	4%
Total	70%	5%	65%	60%	1%	4%

^{a)} All percentage numbers refer to total bank assets; numbers are sometimes subject to rounding errors.

Source: Hüttl and Schoenmaker [2016].

The literature offers two major lines of argument as to why an incomplete regulatory integration may endanger financial stability when multinational banks are dominant. The first line of argument focusses on the fact that multinational banks react elastically to differences in national regulatory frameworks and can easily, by cross-border mergers or de-novo (greenfield) investments in foreign subsidiaries or branches, select their regulatory standard as they wish.⁷ In this situation, competition in bank regulation could be welfare-detrimental, in comparison with a cooperative solution where bank supervision is by a multinational regulator.⁸ The “classic” argument is provided in Dell’Ariccia and Marquez [2006], who consider macro-prudential policies in the form of setting minimum capital requirements. They argue that competition between national regulators could lead to a “race to the bottom”, resulting in lower capital standards in comparison with those set by a multinational regulator⁹. The reason is that national regulators do not take into account the external benefits of higher capital requirements in terms of a larger stability of foreign financial markets. A multinational regulator, in turn, would internalize such international spill-over-effects. In addition, national regulators might set lower capital requirements in order to increase the profitability of domestic banks. This could cause a “competition in laxity”, also resulting in capital requirements that are too low, thus endangering financial stability.

This argument is supplemented by Holthausen and Rønde [2005], who consider the voluntary exchange of information between regulators in two countries where banks offer financial services through branches. In the model, the authorities have only one disposable policy instrument, this time bank closure policies, instead of setting minimum capital requirements. National supervisors are interested only in the welfare of their own country and disregard that of the other country. As long as the preferences of the national supervisors do not coincide perfectly, they do not reveal all the necessary information to the authority in the other country.¹⁰ This imperfect exchange of information prevents reaching a first-best closure policy. Rather, some banks are left open when they should be closed (“Type I” mistake) and vice versa (“Type II” mistake). The banks react to these imperfect closure policies and choose the country where supervisors are less inclined to close them. If the interests of the supervisors become more aligned, more detailed information can be exchanged and the welfare resulting from the closure decision increases.

Another point in favor of multinational bank supervision is made by Acharya [2003], who analyzes the joint design of two regulatory instruments, minimum capital requirements together with bank closure policies. He shows that a cross-border harmonization of capital requirements is beneficial only if the other instrument is also standardized. Otherwise, spillovers from more lenient authorities to less lax regimes would occur. With uniform capital ratios, domestic banks with less forbearing regimes compete on domestic markets with foreign banks from more lenient regimes, which can take greater risks. This reduces domestic bank profits and forces domestic regulators to adopt greater forbearance in order to prevent market exit. In consequence, regulators in different countries converge to the lowest level of forbearance or apply different capital adequacy ratios to compensate for differences in laxity. Uniform capital requirements across nations are thus only desirable if supervisors maintain different closure policies. An incomplete (or asymmetric) harmonization of regulatory policies may therefore be more harmful for welfare than no international harmonization at all.

All papers mentioned above make a strong case for a common regulatory framework and a single bank supervisory mechanism, envisaged as the first key element of EBU. In addition, Hardy and Nieto [2014] analyse, in a cross-border context, the interaction between deposit insurance and prudential bank supervision. They show that uncoordinated policies tend to yield too little supervision and too much deposit insurance. In particular, countries tend to provide too little prudential supervision, because they do not take account of the benefit to other countries. To compensate, countries provide more generous deposit guarantees than would be first best. In contrast, full coordination of prudential supervision and deposit guarantees would result in the highest level of safety and soundness and involve the lowest provision of deposit guarantees.

Within the European Union, deposits up to 100,000 Euros per person and bank are currently covered by statutory deposit insurance. Local politicians, however, can easily enlarge this limit at their own discretion in order to prevent a bank run.¹¹ While this makes

domestic banks safer, it increases the vulnerability cause depositors react by transferring their funds to such accounts. The result could be a race to the bottom, whereby politicians from all countries increase deposit insurance coverage or, in addition, terminate all bail-in rules. Knowing that limits to deposit insurance coverage will be cancelled ex post, depositors and banks no longer consider them as credible ex ante. This will lead ultimately to excessive risk-taking by banks, thus endangering financial stability. In contrast, the single deposit insurance scheme terminates this behavior, since local politicians lose access to common guarantee funds.

The second major line of arguments in favour of a delegation of bank regulatory powers to a supranational regulator focuses on the resolution of multinational banks. Special bank resolution schemes offer bank regulators a new instrument for handling the failure of banks and of bank-holding companies that are regarded as “too-big-to-fail”. Such schemes became necessary, because ordinary insolvency procedures often need too much time, inhibit any pre-emptive intervention and imply a suspension of payments to creditors, which is not applicable in the case of a bank. Special bank resolution procedures allow regulators to intervene in the business of a bank before balance-sheet insolvency has occurred.

Beck et al. [2013] analyze how the organizational structure of multinational banks influences the incentives of a national bank regulator to open a bank resolution procedure. They consider a multinational bank which raises equity and deposits and invests proceeds into risky assets. The bank is financed partially by foreign equity and foreign deposits and holds foreign assets as well. Before the returns on the bank’s assets materialize, a supervisor decides to intervene in the bank or allows the bank to continue. Beck et al. [2013] show that a national regulator’s incentive to intervene is distorted whenever the bank does not hold the same shares in foreign equity, foreign deposits, and foreign assets. In particular, the national supervisor’s incentive to intervene and resolve a weak bank increases with the foreign equity share and decreases with the share of foreign deposits and foreign assets. The reason is that the gains from letting the bank continue accrue to equity holders, while the costs accrue to debt holders. These distortions, however, disappear if the decision on whether or not to intervene is taken by a multinational supervisor, such as the SRB within the European Banking Union, who cares about combined welfare of domestic and foreign stakeholders.

Special bank resolution procedures allow bank regulators to inject additional capital in order to keep the bank open and to preserve its franchise value. The natural way to recapitalize a bank is to use a bail-in procedure, whereby the debt instruments are converted into equity capital and used to cover the bank’s losses. In the case of a multinational bank, however, regulators have to decide ex ante whether the bail-in procedure is applied at the level of the global bank holding company (as is the case in an SPE procedure) or at the level of the local subsidiaries (as under the MPE approach). Under the SPE procedure, the loss-absorbing capacity of debt holders is shared across jurisdictions. In contrast, under MPE resolution, each regulator draws upon the loss-absorbing capacity of creditors within

its own jurisdiction. As long as regulators can fully commit to cooperate during the bank resolution procedure, SPE is the efficient resolution mechanism, since it needs a lower loss-absorbing capacity than the MPE approach. The reason is that regulators under the SPE approach are allowed to make transfers between bank subsidiaries that are located in different jurisdictions [Bolton, Oehmke, 2015].

The drawback, however, is that the SPE approach is not ex-post incentive-compatible, because regulators may opt-out from the cooperative solution and instead, start a national resolution scheme (or “ring-fence” their domestic subsidiaries), once the resolution procedure has begun.¹² This is more likely whenever the expected cross-jurisdictional transfers are asymmetric and applies especially to those regulators who expect to make a large inter-jurisdictional transfer. Since the SPE approach is not incentive-compatible ex post, it is also not credible ex ante, as long as regulators cannot firmly commit to making payments during resolution. To overcome this problem, the transfer of resolution authority from the level of single jurisdictions to a supranational body, as stipulated in the European Banking Union, is a suitable device for realizing the full benefits from an SPE resolution procedure [Bolton and Oehmke, 2015; Faia and Weder di Mauro, 2015].

Viewed from this perspective, it makes sense to delegate the resolution decision to the Single Resolution Board, which comprises representatives from all countries concerned. The Board will probably be able to use the SPE approach for resolving a multinational bank from Member States of the EBU. In cases of resolving a multinational bank with subsidiaries from an opt-in country, however, the SPE approach will be followed, only if all National Competent Authorities involved agree. If not, MPE resolution will be used, which implies that larger loss-absorbing capacities are needed (Deutsche Bundesbank 2014).

An alternative way to recapitalize a multinational bank would be the injection of capital from a resolution fund. Such a recapitalization is straightforward in a national setting, provided that the social benefits of the recapitalization (in terms, for example of preserving financial stability) exceed the cost. In the case of a multinational bank, however, coordination failures may occur, because cross-border recapitalizations create positive externalities. If financial burden-sharing is negotiated ex post, i.e., after the resolution-sharing has begun, host-countries have an incentive to understate their share of the problem, in order to have a smaller share in the recapitalization costs. In the end, only the regulator of the home country is left with the decision, and has to fund the recapitalization of the failing bank. That leads to an under-provision of recapitalizations, i.e., to excess liquidations of financial institutions that should be better rescued [Freixas, 2003; Goodhart, Schoenmaker, 2009].

In order to overcome such coordination failures, ex-post negotiations should be substituted by an ex-ante mechanism for fiscal burden-sharing, i.e., the introduction of a bank resolution fund financed with proceedings from an ex ante bank levy [Goodhart and Schoenmaker, 2009; Walther and White, 2015]. If the sharing agreement is binding and credibly implemented, it tends to solve the coordination failure. It improves the efficiency of the recapitalization policy, as both externalities in the home country and the

host countries are taken into account when the bank recapitalization decision is made at the supranational level. The problem of socially insufficient recapitalization decisions remains, only for multinational banks doing sizable business outside the European Union. Goodhart and Schoenmaker [2009] also differ between two types of bank resolution schemes, a “general scheme” funded collectively by all participating countries (“general burden sharing”), and a location-specific scheme, funded only by the countries where the assets of the multinational bank are located (“specific burden sharing”). They show that the second one is preferable, because it aligns a country’s benefits with its contribution to the recapitalization cost and involves no international transfers.

The EBU follows these recommendations insofar as it mandates the build-up of a frontloaded resolution fund; its size, however, will be only 55 bn. Euros and probably much too small to finance a recapitalization of even a medium-sized multinational bank. Moreover, the EBU applies “general burden sharing” because the “Single Resolution Fund” will be financed with contributions from all Member States. This implies that some ex post burden sharing is needed, and this applies if a multinational bank with subsidiaries from a non-EBU Member States will be involved.

Reform Options: How to Increase the Attractiveness of the EBU?

The theoretical banking literature provides a strong case in favor of the delegation of regulatory powers to a multinational regulator. It is beneficial from the perspective of all EU member countries in total. It is less clear, however, how potential gains from EBU membership are divided between “ins” and “opt-ins” of the European Banking Union. Some information can be gained from Schoenmaker and Siegmann [2013; 2014] who calculate how the efficiency gains from the EBU’s bank resolution instrument are divided between participating countries. For that purpose, they calculate a country’s contribution to the European Bank Resolution Fund which depends mainly on the country’s size in terms of GDP and population. In addition, they estimate a country’s potential return from bank resolution if a systemic bank collapses and has to be recapitalized from the bank resolutions fund.

Using this method, countries without systemic banks naturally receive a negative net return from the European bank-resolution instrument, while countries with a large banking sector have a positive net return. Schoenmaker and Siegmann [2013; 2014] find that among the current 19 Eurozone member countries, Spain and the Netherlands are the largest net beneficiaries and receive the largest positive net returns. Germany, France, and Italy, on the other hand, receive negative returns and are net contributors. If one assumes counterfactually that all EU Member States would participate in EBU, the UK,

Sweden and Denmark also belong to the winners, while all CEECs are net contributors, with Poland bearing the largest potential loss among CEE pre-in countries.¹³

Given these results, one might ask what reform options exist, which make it more attractive for opt-in countries to establish close cooperation with the ECB and to apply the EBU institutions before the adoption of the Euro. Three reform options can be conceived. The first would be the transfer of supervisory decision-making authority within the ECB from the *Governing* Council to the *General* Council which currently meets four times a year. The General Council consists of the ECB President, the Vice-President and the Governors of the National Central Banks of *all* EU Member countries. It deals with subjects that concern both the Monetary Union and the other EU Member States. Opt-in countries are thus also represented in the General Council, which is currently regarded as a transitional body within EMU.

A transfer of supervisory decision-making authority would hence imply that representatives of the opt-in-countries take part in the supervisory decision-making process. This, however, also holds true for those EU Member States, such as Sweden and UK, which have already decided not to enter the EBU in any case. A transfer of supervisory decision-making to the ECB's General Council would also imply that decisions concerning banks within EBU countries are taken partly by representatives from countries outside EBU. It thus seems rather improbable that such a transfer of decision-making rights would currently find a political majority within the European Union.

A second reform option would be allowing an automatic payback of payments made to the resolution funds, if an opt-in country decides to terminate the "close cooperation" with the ECB. As mentioned above, an opt-in country may claim repayment of contributions to the Single Resolution Fund, but the Single Resolution Board will decide about the size and the timing of repayments. The alternative would be an *ex ante* agreed-upon repayment rule, which currently does not exist within EBU, because the SRF has only just started to operate. Such a rule, however, must be incentive-compatible. In particular, it has to make sure that opt-in countries do not terminate close cooperation if payments to banks in other Member States have to be made. To prevent such behavior, it is conceivable to follow the proposal made in Goodhart and Schoenmaker [2009] and to apply specific burden-sharing to the resolution process of banks¹⁴. A burden-sharing agreement, however, must be credible, and thus has to be more than a mere memorandum of understanding which is not legally binding. It has to be incorporated into resolution plans which could include a burden-sharing mechanism for central banks (liquidity support) and ministries of finance (capital support). The burden-sharing would then be agreed on through an institution-by-institution basis [Avgouleas, Goodhart, Schoenmaker, 2013].

A final reform option could be providing opt-in countries with access to payments from the European Stability Mechanism (ESM) and offering them a fiscal backstop. This would allow opt-in countries to recapitalize ailing banks with minimal bail-in-able capital, without having to rescue domestic fiscal resources. Access to the ESM's financial capacities

is possible, however, only for EU Member States which have ratified the fiscal compact and introduced a “tax brake” into their constitutions. Without such a step, Eurozone Member States will hardly give Non-Eurozone Member States access to ESM, because of fears that ESM financial capacities could be used in order to fight a fiscal crisis which is not caused by a crisis in the banking sector.

It currently seems that there is no realistic reform option available which is attractive enough for opt-in countries to give up the “wait and see” approach and to enter EBU. It is thus rather unlikely that the four CEECs will establish close cooperation with the ECB in the near future, given the presently stable financial sectors in these countries. This could change, however, if the current Member States of the EBU intensify their cooperation and unify their positions, resulting in a marginalization of opt-in countries within the ECB and the European Union. In that case, opt-in countries would be pressed to reconsider their “position in respect of joining” if they still want to be involved in the ECB’s internal decision-preparation forums [Kisgergely, Szombat, 2014].

Conclusions

The purpose of the current paper was to analyze the possible consequences of the asymmetric economic integration for financial stability in Europe. We focused on the European Banking Union, which will not be implemented in the EU Member States outside the Euro area. We described the main elements of EBU and presented the reasons why some of the EU countries outside the Eurozone hesitate to join the Banking Union, but rather follow a wait and see approach. Since the EBU is a very recent institution, there is little evidence on its functioning. Rather, we presented some arguments as to why an asymmetric integration might have destabilizing effects on financial markets. Currently, we do not see any reform options which make it more attractive for the opt-in countries to establish close cooperation with the ECB.

One should not consider the above analysis as a general plea in favor of the European Banking Union, because it has several drawbacks and misconceptions. One problem results from possible conflicts of interest between the ECB’s role in banking supervision and in monetary policy. It cannot be ruled out that the ECB will make its interest rate decisions dependent on the financial situation of supervised banks. Moreover, the incentive effects of the bank levy are not fully understood in the literature. Finally, the Single Resolution Fund and the European Deposit Insurance System might create moral hazard and incentives for banks to take additional risks.¹⁵ Nevertheless, given the existence of EBU, the fact that important countries with a significant share of cross-border financial flows stand outside the Banking Union, creates some additional problems because it endangers financial stability. Seen from this perspective, the arguments presented here

should be regarded as another criticism of the EBU, which failed to integrate all relevant political actors into the common regulatory framework.

A remaining question is how the “wait and see” approach currently taken by the opt-in countries will influence the chances of these countries entering the European Monetary Union. Of course, opt-in countries are committed to fulfill the Maastricht convergence criteria and to adopt the Euro as national currency; membership in the Eurozone will then automatically also imply membership in the EBU. The question is whether the quick establishment of “close cooperation” with the ECB will accelerate the country’s entry into the monetary union.

While this is inevitably difficult to assess, it is rather likely that the decision to enter EMU is a political one and only marginally influenced by the decision of National Competent Authorities to enter the EBU. This verdict might change, however, if financing conditions become drastically different for Banking Union Member Countries and for outsiders, or if domestic credit institutions have to face significant competitive disadvantages in relation to other interbank transactions, while their oversight-related costs are roughly the same. This may exert institutional pressure on CEEC’s decision-makers to reconsider their current position towards EBU membership [Kisgergely, Szombat 2014].

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Notes

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² This is already known from the literature on interbank markets. See, e.g., Allen and Gale [2000a].

³ This period is usually no longer than ten working days; in case of emergency, the period is 48 hours. See Narodowy Bank Polski [2014].

⁴ The SRB is located in Brussels and has a staff of around 250. The board operates in two sessions. The executive session makes preparatory and operational decisions for resolving individual banks; participants are the chairperson of the board, the four permanent members and representatives of the national authorities where the bank is established. In the plenary session, individual resolution cases are decided if the support for a bank exceeds 5 bn. Euros.

⁵ After the SRB has made a proposal regarding to a single resolution case, a silent procedure is foreseen to allow the European Commission or the European Council to decide whether or not the SRB's proposal is followed. The resolution scheme will enter into force only if neither of these institutions has raised any objections within 24 hours. In case of objection, the SRB has to modify the resolution scheme within eight hours [Deutsche Bundesbank 2014].

⁶ EDIS is currently only an issue within a proposal made by the European Commission. Some National Governments have raised concerns about the current proposal.

⁷ For evidence, see Focarelli and Pozollo [2005], Müller and Uhde [2013].

⁸ This literature on the relationship between regulatory competition and financial stability should not be confused with the literature on the relationship between competition in the banking sector and financial stability. See, e.g., Allen and Gale [2000b].

⁹ A "race to the bottom" is also analysed in Agai [2015], who considers regulatory arbitrage by banks which can in reality choose their regulators by relocating their headquarters. For empirical evidence on the existence of a "race to the bottom" in US banking, see Buch and DeLong [2008], Carbo-Valdene et al. [2012], Houston et al. [2012], Onega et al. [2014], Karolyi and Taboada [2015], and Temesvary [2015]. For evidence on Europe, see Aiyar, Calomiris, and Wieladek [2012], Bremer and Fratzscher [2015], or Reinhardt and Sowerbutts [2015].

¹⁰ A case in point for an insufficient exchange of information between national supervisors from Belgium and the Netherlands was the resolution of Fortis Bank in 2008. See Beck et al. [2013].

¹¹ In October 2008, the German Minister of Finance Peer Steinbrück and Chancellor Angela Merkel declared a blanket guarantee for all deposits with German banks.

¹² For evidence on such ring-fencing activities, see Cerutti et al. [2014]

¹³ Croatia is not included in the sample. Interestingly, those countries which, for political reasons, will definitively not enter EBU, namely Sweden and the UK, would be the largest beneficiaries. See Schoenmaker and Siegmann [2013b].

¹⁴ Such a specific burden-sharing agreement was agreed upon in 2010 by the banking authorities in the Baltic and Nordic countries. Under this scheme, the ministries of finance share the costs of a possible bank failure, according to a burden-sharing key, which reflects the spread of the bank's assets over the different countries. See Beck et al. [2011].

¹⁵ Bertola et al. [2014] and Vaubel [2013] provide critical assessments of EBU. See also Vollmer [2015].

References

- Acharya, V.V. (2003), Is International Convergence of Capital Adequacy Regulation Desirable?, *The Journal of Finance*, 58(6), pp. 2745–2781.
- Agai, I. (2013), Multiple Regulators and Risk Taking, *Journal of Financial Stability*, 9, pp. 259–268.
- Aiyar, S., Calomiris, C., Wieladek, T. (2012), *Does Macropuru Leak? Evidence from a UK Policy Experiment*, NBER Working Paper, No. 17822, Cambridge/Mass.
- Allen, F., Beck, T., Carletti, E., Lane, P.R., Schoenmaker D., Wagner, W. (2011), *Cross-Border Banking in Europe: Implications for Financial Stability and Macroeconomic Policies*, London, CEPR.
- Allen, F., Gale, D. (2000a), Financial Contagion, *Journal of Political Economy*, 108, pp. 1–33.
- Allen, F., Gale, D. (2000b), Competition and Financial Stability, *Journal of Money, Credit, and Banking*, 36(3), pp. 453–480.
- Avgouleas, E., Goodhart, C., Schoenmaker, D. (2013), Bank Resolution Plans as a Catalyst for Global Financial Reform, *Journal of Financial Stability*, 9(2), pp. 210–218.
- Beck, T., Todorow, R., Wagner, W. (2013), Supervising Cross-Border Banks, *Economic Policy*, 28(73), pp. 5–44.

- Bertola, G., Driffill, J., James, H., Sinn, H.-W., Sturm, J.-E., Valentinyi, Á. (2014), *The EEAG Report on the European Economy 2014: The Road Towards Cohesion*, CESifo Group Munich, Munich.
- Bolton, P., Oehmke, M. (2015), *Bank Resolution and the Structure of Global Banks*, mimeo, Princeton University, available at: http://som.yale.edu/sites/default/files/files/BoltonOehmke_BankResolution.pdf
- Bremer, F., Fratzscher, M. (2015), Drivers of Structural Change in Cross-border Banking Since the Global Financial Crisis, *Journal of International Money and Finance*, No. 52, pp. 32–59.
- Buch, C.M., DeLong, G. (2008), Do Weak Supervisory Systems Encourage Bank Risk-Taking?, *Journal of Financial Stability*, 4, pp. 23–39.
- Carbo-Valverde, S., Kane, E.J., Rodriguez-Fernandez, F. (2012), Regulatory Arbitrage in Cross-Border Banking Mergers within the EU, *Journal of Money, Credit, and Banking*, 44(8), pp. 1609–1629.
- Cerutti, E., Ilyina, A., Makarova, Y., Schmieder, C. (2014), *Bankers Without Borders? Implications of Ring-Fencing for European Cross-Border Banks*, IMF WP 10/247, Washington, D.C.
- Danmarks Nationalbank (2014a), Danish Participation in the Banking Union, *Monetary Review*, 4th Quarter, pp. 41–48.
- Danmarks Nationalbank (2014b), *Participation in the Banking Union is in the Interest of Denmark*, Copenhagen.
- Davas, Z., Wolff, G.B. (2013), Should Non-Euro Area Countries Join the Single Supervisory Mechanism?, *DANUBE: Law and Economics Review*, 4(2), pp. 141–163.
- Dell’Ariccia, G., Marquez, R. (2000), Competition among Regulators and Credit Market Integration, *Journal of Financial Economics*, 79, pp. 401–430.
- Deutsche Bundesbank (2013), European Single Supervisory Mechanism for Banks – a First Step on the Road to a Banking Union, *Monthly Report*, 65(7), pp. 15–34.
- Deutsche Bundesbank (2014), Europe’s New Recovery and Resolution Regime for Credit Institutions, *Monthly Report*, 66(6), pp. 31–55.
- Dietrich, D., Knedlik, T., Lindner, A. (2011), Central and Eastern European Countries in the Global Financial Crisis: A Typical Twin Crisis?, *Post-Communist Economies*, 23(4), pp. 415–432.
- Draghi, M. (2014), *Financial Integration and Banking Union*, Speech at the Conference for the 20th Anniversary of the Establishment of the European Monetary Institute, Brussels, 12 February 2014.
- European Central Bank (2013), The Importance and Effectiveness of National Fiscal Frameworks in the EU, *Monthly Bulletin*, February, pp. 73–88.
- European Central Bank (2014a), *Decision of the European Central Bank of 31 January 2014 on the Close Cooperation with the National Competent Authorities of Participating Member States Whose Currency is not the Euro*, Frankfurt/Main.
- European Central Bank (2014b), *Guide to Banking Supervision*, Frankfurt/Main.
- European Commission (2013a), *Table on the Ratification Process of Amendment of Art. 136 TFEU, ESM Treaty and Fiscal Compact*, Direction General for the Presidency, 19. July 2013, Brussels.
- European Commission (2013b), *Legislative Package for Banking Supervision in the Eurozone – Frequently Asked Questions*, MEMO/13/780, Brussels.
- European Commission (2014a), *A Single Resolution Mechanism in the Banking Union – Frequently asked Questions*, April, 15, 2014, Brussels.
- European Commission (2014b), *Deposit Guarantee Schemes – Frequently Asked Questions*, MEMO/14/296, Brussels.
- European Commission (2015), *Fact Sheet A European Deposit Insurance Scheme (EDIS) – Frequently Asked Questions*, Strasbourg, 24 November 2015.
- European Parliament – Directorate General for Internal Policies (2013), *Article 136 TFEU, ESM, Fiscal Stability Treaty, Ratification Requirements and Present Situation in the Member States*, June 11, Brussels.

- Faia, E., Weder di Mauro, B. (2015), *Cross-Border Resolution of Global Banks* European Commission, Directorate-General for Economic and Financial Affairs, Discussion Paper No. 11, http://ec.europa.eu/economy_finance/publications/eedp/pdf/dp011_en.pdf
- Focarelli, D., Pozollo, A.F. (2005), Where Do Banks Expand Abroad? An Empirical Analysis, *The Journal of Business*, 78(6), pp. 2435–2464
- Freixas, X. (2003), Crisis Management in Europe, in: J. Kremers, D. Schoenmakers, P. Wierds (eds., *Financial Supervision in Europe*, Cheltenham (Edgar Elgar), pp. 102–119.
- Goodhart, C., Schoenmaker, D. (2009), Fiscal Burden Sharing in Cross-Border Banking Crises, *Journal of Central Banking*, 4(1), pp. 141–165.
- Hardy, D.C., Nieto, M.J. (2011), Cross-border Coordination of Prudential Supervision and Deposit Guarantees, *Journal of Financial Stability*, 7(3), pp. 155–164.
- Holthausen, C., Rønde, T. (2005), Cooperation in International Banking Supervision, European Central Bank, *Working Paper Series*, No. 316, Frankfurt/Main.
- Houston, J.F., Lin, C., Ma, Y. (2012), Regulatory Arbitrage and International Bank Flows, *Journal of Finance*, 67, pp. 1845–1895.
- Hüttl, P., Schoenmaker, D. (2016), Should the ‘Outs’ Join the European Banking Union?, *Bruegel Policy Contribution*, February.
- International Monetary Fund (2013), *A Banking Union for the Euro Area*, Washington (IMF).
- International Monetary Fund (2015), *New Member States Policy Forum, 2014, Central and Eastern Europe: Staff Report on Cluster Consultations – Common Policy Frameworks and Challenges Consultations*, Washington.
- Karolyi, G.A., Taboada, A.G. (2015), Regulatory Arbitrage and Cross-Border Bank Acquisitions, *Journal of Finance*, 70(6), pp. 2395–2450.
- Kisgergely, K., Szombat, A. (2014), Banking Union through Hungarian Eyes – the MNB’s Assessment of a Possible Close Cooperation, *MNB Occasional Papers*, 115, Budapest.
- Müller, O., Uhde, A. (2013), Cross-border bank lending: Empirical evidence on new determinants from OECD Banking Markets, *Journal of International Financial Markets, Institutions and Money*, 23, pp. 136–162.
- Narodowy Bank Polski (2014), *The Economic Challenges of Poland’s Integration with the Euro Area*, Warsaw 2015, available at: <http://www.nbp.pl/en/publikacje/inne/The-economic-challenges-of-Polands-integration-with-the-euro-area.pdf>
- Onega, S., Popov, A., Udell, G.F. (2013), When the Cat’s Away the Mice Will Play: Does Regulation in Home Affect Bank Risk Taking Abroad?, *Journal of Financial Economics*, 108, pp. 727–750.
- Reinhardt, P., Sowerbutts, R. (2015), Regulatory Arbitrage in Action. Evidence from Bank Flows and Macroprudential Policies, *Bank of England, Staff Working Paper*, No. 546, London.
- Schoenmaker, D., Siegmann A. (2013), *Winners of a European Banking Union*, VoxEU, 27 February.
- Schoenmaker, D., Siegmann A. (2014), Can European Bank Bailouts Work?, *Journal of Banking & Finance*, 48, pp. 334–349.
- Temesvary, J. (2015), *The Role of Regulatory Arbitrage in U.S. Banks’ International Lending Flows: Bank-Level Evidence*, Cornell University, mimeo.
- Vaubel, R. (2013), Probleme der Bankenunion. Falsche Lehren aus der Krise, *Kredit und Kapital*, 46, pp. 281–302.
- Vollmer, U. (2015), “Stairway to Heaven” oder “Highway to Hell”? – Eine Einschätzung der Europäischen Bankenunion, *ORDO – Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft*, 66, pp. 147–174.
- Walther, A., White, L. (2015), *Rules versus Discretion in Bank Resolution*, mimeo, University of Oxford, Harvard Business School.