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Lessons from the European Financial Stability Framework Exercise

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July 11, 2011

Key Issues

This European Financial Stability Framework Exercise (EFFE), conducted by IMF staff, is expected to be a precursor to a Financial Sector Assessment Program (FSAP) for the EU area. It focuses on the internal consistency of the design of the new framework and on identifying outstanding issues. Assessing the functioning of the new institutions is premature given their recent setup, while issues related to the current macro-economic scenario are being dealt with in the report on the euro area consultation.

The European Union's (EU) financial stability framework is being markedly strengthened, with more responsibility for financial stability moving to the EU level. Several new institutions have been operating since 1 January 2011, and progress is being made on harmonizing regulation, supervision, deposit insurance, crisis management and resolution, besides other areas.

The EFFE sees a need to: (i) strengthen the effectiveness of the current institutions, including with regard to decision making and the transition to the new regime; (ii) adopt a consistent design across all elements of the financial stability framework, while allowing adaptation to local or temporary circumstances; and (iii) fill in an important gap in the present framework by ensuring effective crisis management and resolution.

Developments regarding the financial stability framework in Europe are of interest worldwide; also, experiences from outside Europe may assist in the continuing evolution of the European financial stability architecture. There would thus seem to be a role for periodic IMF surveillance. The proposed 2012 EU FSAP could be a useful opportunity to take this work forward.

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GLOSSARY

AMF	Authority for Financial Markets (Netherlands)
ASC	Advisory Scientific Committee of the ESRB
ATC	Advisory Technical Committee of the ESRB
BCP	Basel Core Principles
CCP	Central Counterparty
CEREP	Central Repository
COREP	Common Reporting
CRA	Credit Rating Agency
CRD	Capital Requirements Directive
DGCOMP	EC Directorate General for Competition
DGECFIN	EC Directorate General for Economics and Finance
DGMARKT	EC Directorate General for Internal Market and Services
DGS	Deposit Guarantee Scheme
DNB	Netherlands Central Bank
DTI	Debt to Income Ratio
EBA	European Banking Authority
EC	European Commission
ECB	European Central Bank
EEA	European Economic Area
EFC	Economic and Finance Committee of the European Union
EFFE	European Financial Stability Framework Exercise
ELA	Emergency Liquidity Assistance
ESA	European Supervisory Authority
ESCB	European System of Central Banks
ESFS	European System of Financial Supervisors
EIOPA	European Insurance and Occupational Pension Authority
EMIR	European Market Infrastructure Regulation
ESMA	European Securities Market Authority
ESRB	European Systemic Risk Board
EU	European Union
EUR	European Department of the IMF
EWS	Early Warning Exercise
FSA	Financial Soundness Authority
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
IMF	International Monetary Fund
IORP	Institutional and Occupational Retirement Pensions
LEG	Legal Department of the IMF
LOLR	Lender of last resort
LTV	Loan-to-Value Ratio
MCM	Monetary and Capital Markets Department of the IMF
MiFID	Market in Financial Instruments Directive
MoF	Ministry of Finance

MoU	Memorandum of Understanding
NCBs	National Central Banks
P&A	Purchase and Assumption
PRA	Prudential Regulatory Authority (United Kingdom)
SIFI	Systemically Important Financial Institution
TR	Trade Repository
TREM	Transaction Reporting Exchange Mechanism

EXECUTIVE SUMMARY

The European Union's (EU) financial stability framework is being markedly strengthened, with more responsibility for financial stability moving to the EU level. Several new institutions have been operating since 1 January 2011, and progress is being made in harmonizing regulation, supervision, deposit insurance, crisis management and resolution, in particular.

This strengthening is taking place on the heels of a severe financial crisis which is still lingering in weaknesses in the banking system interrelated with sovereign difficulties in the euro area periphery. Constructing a new financial stability framework in the present macro-economic circumstances in the EU complicates the process and poses challenges.

This European Financial Stability Framework Exercise (EFFE), conducted by IMF staff, is expected to be a precursor to a Financial Sector Assessment Program (FSAP) exercise for the EU area. It focuses on the internal consistency of the design of the new framework and on identifying outstanding issues. Assessing the functioning of the new institutions is premature given their recent setup, while issues related to the present macro-economic scenario are being dealt with in the report on the euro area consultation discussions.

Raising the effectiveness of the current setup

Important progress has been made in designing an institutional framework to secure proper micro and macro-prudential supervision at the EU level, but this new set up faces a number of challenges:

- *Establishing the credibility of each of the institutions, and of the system as a whol*e: the European Banking Authority (EBA) has to ensure stress tests in 2011 that are seen to be operationally useful for assisting financial stability; the European Securities Market Authority (ESMA) needs to demonstrate its capability to supervise rating agencies; the European Insurance and Occupational Pensions Authority (EIOPA) must play a key role in adopting Solvency II; and the European Systemic Risk Board (ESRB) needs to provide meaningful warnings and recommendations.

- *Information sharing*: the importance of data sharing is well recognized and the legislation establishing the new EU agencies, as well as recent EU legislation, provide for robust information sharing duties on the part of national authorities enabling such agencies to have access to the data relevant for the exercise of their tasks. Residual obstacles that may still prevent in practice full data sharing among the national supervisors and the relevant ESAs or the ESRB need to be fully removed, if necessary through legislative changes including at the national level. Still more work

is needed to ensure the timely compilation of comparable data on the main risk factors, which can evolve quickly.

- *Effective supervision*: good supervision rests on a blend of offsite and onsite components. The ongoing offsite reforms should therefore be complemented by renewed attention to onsite supervision, involving the core colleges.

- *Developing a "Single Rule book"* and harmonizing supervisory practices at the highest possible level, as a key element in establishing a single market in financial services and avoiding regulatory arbitrage.

- *Ensuring that the resource pool of the ESAs is commensurate with their mandate and responsibilities,* while leveraging on the resources of the national authorities: the availability of sufficient skilled staff is critical to ensure that risky compromises do not need to be made. New tasks and powers will have to be accompanied by additional resources.

- *Effective decision making*: the current arrangements rest on substantial involvement of the institutions' stakeholders, geared to generating mutual trust and buy-in. Additional measures could be taken to ensure that the process does not become unwieldy and that decisions can be made quickly, particularly in a crisis.

- *Clear and comprehensive macro-prudential oversight needs to be established*. An enhanced role could be given to the ESRB, especially with respect to cross-border application of macro-prudential tools in a uniform manner.

- *Effective dispute resolution:* the new ESAs have been given roles in cross-country disputes and emergency situations, which are expected to be further, strengthened under the forthcoming Commission proposals, to settle disagreements between supervisors or, in exceptional circumstances, to take temporary action aimed at safeguarding financial stability. In general, the aim should be to promote EU-focused rather than domestic solutions.

Ensuring consistency across all elements of the financial stability framework

Many EU-wide initiatives are proceeding in the areas of regulation and supervision. Moving on parallel tracks is commendable, but raises the need to ensure consistency. Several issues can be highlighted:

- New capital adequacy rules need to be strong and adaptable to changing economic circumstances, but also supportive of the single financial market. Hence it will be important to set capital requirements at an ambitiously high level, possibly above Basel III. In addition there should be sufficient scope for supervisors to address prudential concerns within their areas of operation, in particular by allowing

sufficient scope for the introduction and national operation of a range of macroprudential instruments and topped-up capital demands on systemically important financial institutions (with reciprocity coordinated through the ESRB);

- The state aid regime for the banking system needs to take account of the development of resolution frameworks together with systemic and stability considerations that are special to the financial sector;

- Conduct-of-business and consumer protection policies are important for financial stability and the completion of the internal market. Therefore appropriate coordinating arrangements at the EU level need to be identified (e.g., through the Joint Forum);

- Deposit guarantee schemes and resolution funds need to be designed in a consistent manner;

- Clear rules need to be laid down for imposing losses on the private sector; and

- Clear rules need to be laid down for sharing the burden across Member States in a way that facilitates the effective resolution of future financial crises.

Completing the framework

Putting in place an effective framework for crisis management and resolution remains a priority.[1]

The resolution tool kit will remain incomplete as long as it does not include an EU-wide mechanism to address weaknesses in the financial system, including the central provision of financing during restructuring and a fiscal backstop to share any residual costs (ideally prefunded by the industry to mitigate moral hazard). National authorities should pursue private sector solutions to restructure fragile banks, via mergers and acquisitions, also across borders, with the EBA playing a leading role in orchestrating the restructurings. Innovative techniques to minimize the burden on taxpayers, including bail-in arrangements and contingent capital buffers, may be useful elements in the toolkit. For systemic questions spilling across borders, an explicit, rather than *ad hoc*, decision making mechanism needs to be put in place. The EBA can play a role in monitoring this. The review envisaged for 2014 recognizes the need to move ahead in a number of these areas, but earlier progress is highly desirable.

[1] Given that the banking passport applies also to EEA countries, it is preferable to include also these countries in such regime.

Coordination beyond the EU

For financial stability in Europe, European agencies have to look outside as well as inside the Union. Most European systemically important financial institutions (SIFIs) operate also outside the EU. EU financial stability therefore requires close cooperation with bodies outside the EU, including in the areas of supervision and cross-border resolution. It will be important to work to harmonize insofar as possible with outside jurisdictions, and in particular to assess in full the implications of the Dodd Frank legislation.

Developments regarding the financial stability framework in Europe are of interest worldwide; also, experiences from outside Europe may assist in the continuing evolution of the European financial stability architecture. The proposed 2012 EU "FSAP" could be a useful opportunity to take this work forward.

I. INTRODUCTION

1. **Since the 2008–9 global economic crises, the EU has intensified its efforts to strengthen its financial stability infrastructure, recognizing that financial stability is a common public good and that national decisions easily transcend borders**. The aim is to promote the single market in financial services and to manage the financial system in a way that minimizes the likelihood and potential severity of future financial sector difficulties. Impressive progress has been achieved, as a range of new institutions have been established and started operations

2. **The success of EU-wide efforts to secure financial stability is of keen interest to the IMF, reflecting its global mandate**. The IMF has long been involved in the debate over the EU's financial policy framework, notably through its euro area surveillance. Bilateral financial sector surveillance too is being pursued: Financial Sector Assessment Program (FSAP) Updates have recently been completed for five EU members, and more are planned.[2] In several areas, similar vulnerabilities or institutional issues in different countries have been investigated in detail (Box 1). Thus, a review at the regional level enables an assessment of the common threads, which in many cases derive from decisions and developments at the EU level, and similarly to identify possible regional policy measures.

3. **In light of these considerations, the EU Economic and Finance Committee (EFC) invited the IMF to conduct a limited European Financial Stability Framework Exercise (EFFE) in 2011 as a precursor to a broader FSAP-type exercise in 2012**.[3] The 2011 exercise is intended to give the opportunity for an early view of the emerging European financial stability infrastructure, and to provide a timely oversight over the outstanding issues from the ongoing national FSAPs.[4]

4. **This report is an outcome of the IMF mission that visited Brussels, Frankfurt, London and Paris between April 26 and May 6, 2011.**[5] The mission would like to thank all

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[2] FSAP Updates have been completed for Germany, Luxembourg, Netherlands, Sweden and the United Kingdom, and a more limited exercise has been held for Poland. FSAP Updates for France and the Czech Republic are forthcoming. A discussion of the institutional and legal issues arising from the five completed EU member FSAPs is provided as an annex to this paper.

[3] An FSAP has a number of formal requirements, some of which may not be relevant at a regional level. It therefore needs to be determined whether the exercise in 2012 would technically constitute an FSAP or a parallel exercise with similar characteristics.

[4] The mandate of the EFFE includes the institutional architecture of the EU financial stability framework. Other conjunctural issues, such as the role of the ECB in the current crisis, and alternative mechanisms to deal urgently with ailing financial institutions, form part of the Euro Area Article IV consultation.

[5] The mission comprised Messrs. Enoch (head) and Hardy, Ms. Jassaud, and Messrs. Severo and Wehrhahn (all MCM), Messrs. Everaert and Tressel (both EUR), and Messrs. Gullo and Jansen (both LEG).

its counterparts for their frank and full discussions, and for the excellent coordination of the arrangements for the mission.

Box 1. Some Lessons from Recent European FSAP Updates

The recent FSAP Updates for five EU countries have re-emphasized a number of cross-cutting themes. Especially relevant here are the following:

- The recent global financial crisis was in large measure the product of credit booms and asset price bubbles in the U.S. and various European countries, with its intensity and virulence exacerbated by cross-border linkages and disruption in euro and U.S. dollar funding markets. Financial market strains have been perpetuated by the lack of a common approach to the crisis;
- National institutional and legal frameworks for financial stability are still incomplete. The autonomy of some of the agencies, and institutional arrangements, are open to enhancement. In several cases supervisors are still struggling to adapt their operations to require more and higher quality capital, and to be more pre-emptive, for example in requiring early action; bank resolution frameworks remain a major gap. Crisis management, and especially the management of cross-border crises, needs to be improved in terms of the legal framework, operational arrangements, and ensuring that adequate resources are available on a timely basis;
- Some impediments to fully effective cross-border supervision remain, and the resolution of cross-border banks has been unsatisfactory; and
- Supervisory authorities need to have available more comprehensive and consistent data related to current risk factors, including cross-border developments.

Dealing with these issues may well require EU-level action in terms of both regulation and operational mechanisms.

A more complete discussion of institutional and legal issues deriving from the recent FSAP updates is provided in Annex I.

II. The EU Financial Stability Infrastructure[6]

A. The European System of Financial Supervisors (ESFS)

5. **The establishment of the ESFS represents a large step forward for the single financial market project, but at the same time forms a complicated network of regulatory and supervisory institutions (see Figure 1)**. It was set up to facilitate cooperation among EU and national supervisors, secure the exchange of relevant information, and ensure effective decision-making with respect to cross-border financial institutions. The ESFS is designed to be an integrated network of national and EU-wide supervisory authorities leaving the day-to-day supervision to the national level. An advantage

[6] A detailed description is contained in Appendix 1.

of this network is that it engages the existing national supervisory authorities. However, it remains to be seen how this network will operate in practice, and whether all relevant information will be shared among participating authorities.

B. The European Supervisory Authorities

Structure and responsibilities

6. **On 1 January 2011, the three ESAs were created: the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA), and the European Insurance and Occupational Pensions Authority (EIOPA).** Their creation represents a major enhancement of the mechanisms to coordinate cross-border supervision, facilitate cooperation between supervisors, promote convergence of supervisory practices, and implement the planned "Single Rule Book."

7. **The ESAs are regulatory agencies of the Commission accountable to the European Parliament and the Council of the European Union**. They have legal personality as well as administrative and financial autonomy. Each ESA is governed by: (i) a Board of Supervisors, which is made up of representatives of the relevant national supervisors and, on a non-voting basis, the main relevant European institutions, (ii) a Management Board, made up of a more limited group of Board of Supervisors members, and (iii) a Chairperson and an Executive Director, vested with the powers to, respectively, represent and manage the ESA.

8. **The ESAs have no direct general regulatory powers**. Basic acts such as the main sectoral directives and regulations (e.g., CRD, MiFID, and Solvency II) can only be adopted by the EU legislators (i.e., European Parliament and the Council) on the basis of a proposal by the European Commission. While the ESAs are empowered to draft the technical standards, the Commission retains the formal regulatory power: ultimately it is the Commission that endorses and gives them binding legal effect.[7]

9. **Within the limited circumstances specified in EU legislation, the ESAs will be able to temporarily prohibit or restrict certain financial activities that threaten the orderly functioning and integrity of financial markets or the stability of the financial system. In most areas, however,** the day-to-day supervision of financial institutions will remain at the national level, and the ESAs have only indirect supervisory powers (settlement of disagreements between competent authorities in cross-border situations and across sectors, participating in colleges of supervisors). At the same time, ESAs may adopt decisions addressed to a financial institution in case of a breach of a directly applicable EU legislation,

[7] It should be noted that the European Parliament and the Council have the power to object these standards and, where necessary, block their adoption.

provided that such decision is in conformity with a formal opinion issued by the Commission.[8] ESMA, however, will be the first example of an agency with a pan-European supervisory responsibility, for Credit Rating Agencies (CRAs) starting in June 2011.[9] The overall supervisory package is to be reviewed in 2014.

Establishing credibility

10. **The new ESAs will need to move quickly to establish their credibility with financial institutions and political weight vis-à-vis national authorities**. Otherwise, they risk becoming just an additional layer of supervision and workload with little effect on coordination and targeted harmonization.

11. **Credibility can best be established by early and decisive action**. The main areas of focus are :

- The 2011 EU-wide banking stress test will be a first and critical challenge for the EBA. The methodology and the procedures are already determined, and have been commendably disseminated. While the approach to certain aspects of the current exercise may be viewed as too circumspect, the decision to focus on Core Tier I capital sends a strong signal. The EBA will need to be in the lead with a careful communication strategy as the results come out, and to ensure any follow-on requirements, for instance that certain banks replenish their capital, will be understood and prepared. More generally, there will be a need to ensure that stress tests in the future are properly understood and that they are conducted independently and clear in identifying areas of concern.

- Solvency II implementation is in full swing (see Box 2). For this purpose, EIOPA will have to provide a large volume of detailed guidance and implementing standards, before full implementation at end 2012.[10] Moreover, conducting the upcoming European insurance sector stress tests with rigor and efficiency will contribute to consolidating EIOPA's standing. There is a full agenda of issues affecting the insurance and occupational pensions sector.

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[8] Individual decisions addressed to financial institutions may also be issued in case of an emergency situation, triggered by the Council**,** and if a financial institution is required to comply with its obligations under EU law where competent authorities have not resolved disagreements in cross-border situations.

[9] It is understood that the responsibility will be delegated to national authorities as the ESMA builds up its implementation capacity.

[10] Appendix II provides more details on outstanding supervisory issues in the insurance and occupational pension sectors.

- Recent legislative initiatives in the securities markets reinforce the role of the ESMA on several fronts, including on CRAs, hedge funds (Alternative Investment Fund Managers), Trade Repositories (TR), Central Counterparties (CCPs)[11] and the temporary prohibiting or restriction of financial activities that threaten financial stability or the orderly functioning of financial markets.

12. **It is important that sufficient resources with commensurate skills be allocated to these functions**. In this regard, the initial administrative burden related to the creation of the new operational and administrative framework together with the need to deliver on the responsibilities will present a challenge. Capacity to deliver on existing tasks is already stretched, and the prospective expansion of the tasks of the ESAs will require commensurate enhancements in expertise.

Box 2. Current Issues in the Supervision of Insurance and Occupational Pensions

Solvency II is in the process of replacing the current regulatory framework (Solvency I) for insurance companies licensed in the EU; the new regime should be in place January 2013. Solvency II is based on three pillars: quantitative requirements; qualitative requirements such as risk management; and supervisory reporting. EIOPA will take over from CEIOPS in providing technical advice on Solvency II Level 2 implementing measures, and related training. The implementation efforts are following a maximal harmonization approach. But, internal model approval, a key component of Solvency II, will probably require strong engagement from EIOPA, as will the effort to reconcile Solvency II rules on liability valuation with the International Financial Reporting Standards.

With regard to pension funds, the Institutional and Occupational Retirement Prevision (IORP) Directive is in the process of review, thus adding to the workload of EIOPA. Issues of valuation of technical provisions, the security of the benefits and the risk supervision are the main topics of discussion of possible harmonization.

EIOPA's contribution to the assessment of systemic risks is likely to be prominent. The current low interest rate environment could strain the insurance industry even while it benefits other parts of the system.

13. **An important function that has been given to the ESAs is to foster a cooperative relationship among national supervisors**. The ESAs' role is to coordinate and monitor the actions of the national authorities; in this connection, they are also represented at supervisory colleges, and play a mediating role in solving disputes. To enable them to fulfill their responsibilities in this area and to ensure that EU-wide concerns are taken into account, the ESAs need to be represented in any "core colleges" that are established. The ESAs should

[11] In the upcoming European Market Infrastructure Regulation (EMIR) regulation, the ESMA is likely to be given a central role in the colleges of competent authorities facilitating the reach of joint opinions necessary for the authorization.

also make active use of their rights (set out in the regulation establishing the ESAs) to participate in onsite supervision.

14. **Another significant role for the ESAs is to disseminate best practices in supervisory activities.** This needs to be embedded in procedures and in a credible verification process, supported by training. Peer reviews will play an important role in this area. They will need to be intrusive, and be disclosed. The ESAs will also need to put in place procedures for developing, and subsequently verifying consistency of application of the planned "Single Rule Book," and promoting the exchange of information on the treatment of individual institutions, in order to prevent regulatory arbitrage and financial institutions searching for supervisory gaps ("shopping for a regulator").

Governance

15. **The ESAs should act decisively in order to establish their credibility.** Their governance framework assigns one vote per member, and provides for a decision making process requiring majority—either simple or qualified, depending on the circumstances—rather than unanimity; these factors should facilitate rapid and forthright decision-making. A shift of "culture" toward a more EU-wide focus of decision-making will be important.

16. **The required endorsement by the EC of any binding regulation drafted by an ESA is intended to ensure recognition of the interests of the Union, but limits formal independence**. This reliance may however be justified on legal and practical grounds. The procedure for the adoption of technical standards allows the Commission to refuse endorsement only on the basis of certain grounds that have to be based on EU-wide interests. Such procedure may—if applied in a sound manner—lead to a fruitful and transparent dialogue in the adoption of standards, while leaving a predominant role to the ESAs given their technical expertise.[12] As greater experience is gained with the process, the concept of "technical standards," which does not include policy choices, will need to be clarified to avoid possible challenges.

C. European Systemic Risk Board

17. **The ESRB, established at the start of 2011, has a broad mandate and is responsible for the macro-prudential oversight of the financial system in the EU**. It is to issue risk warnings when risks are deemed significant and, when necessary, provide policy recommendations to mitigate the risks identified.

[12] However, the Parliament or the Council may reject a regulatory technical standard before its adoption.

18. **The ESRB is not a separate legal entity**. Formally, it is an independent EU body responsible for the macroprudential oversight of the financial system within the EU[13] The ECB provides analytical, statistical, logistical and administrative support to the ESRB.[14]

19. **The institutional set-up of the ESRB is relatively complex, and could prove unwieldy.** Decisions within the General Board of the ESRB (comprising 37 voting members and 27 non-voting members) will be taken by simple majority, but a majority of two thirds will be needed to adopt recommendations or to make a warning public. The functioning of the ESRB is based on participation involving all key players—national authorities and other EU institutions. This is a pragmatic approach for a new organization. However, there is a risk that such an approach could lead to overly cautious warnings. Moreover, the size of the decision-making group in the ESRB is large, so the timing and the procedures of the decision-making process risk becoming cumbersome. This may be especially costly in time of emerging risks. Moving forward, the General Board should adopt an approach under which puts in place rules that provide broad direction for ESRB activities and ensure accountability but leave ESRB management operational flexibility.

20. **The decision-making processes will need to be flexible enough to facilitate the timely identification of emerging risks**. Currently, the Steering Committee (a sub-group of the General Board) effectively sets the specific work program. In order to promote the "bottom up" identification of risks, it is suggested that the ESRB staff propose the work program to the Steering Committee and thus the General Board, after consultation with national supervisors, the ESAs, and the Advisory Scientific Committee. The ESRB could also consider how to use the Steering Committee beyond setting the work program in order to be the most effective for decision-making.

21. **The ESRB's enforcement of its recommendations will depend on the effective operation of the "comply or explain" principle**. But making warnings and recommendations public may not be a credible threat because doing so could trigger an adverse market reaction. The European Parliament has an explicit role in monitoring actions taken in response to a warning, but such a role can be performed only when recommendations are made public. This limits the potential usefulness of oversight by the Parliament. A possible solution to this concern could be to mandate publication, after a lapse of time, of risk warnings, and recommendations that were not made public, as well as the responses by the addressees, much as central banks do with their market-sensitive decisions. If "comply or explain" does not work well, serious consideration should be given for more direct involvement of the ESRB in ensuring that its recommendations have effect.

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[13] In contrast to the ESAs, the ESRB is not overseeing the enforcement of EU laws, and it does not have the status of a regulatory agency.

[14] Other central banks also provide assistance.

22. **The credibility of the ESRB will depend crucially on its ability to speak "truth to power," and to weigh in on policy decisions**. To this end, it needs early on to publish clear and well-argued analyses of the main current macro-prudential risks. The key test for the ESRB is whether it will be able to identify major risks, issue risk warnings on these risks, and recommend policy actions that are followed-up.

23. **Successful interaction between the ESRB and the ESAs, in particular to ensure a proper coordination of macroprudential and microprudential instruments, will be important**. The ESAs are providing microprudential risk assessments, and are working with the ESRB through the Working Groups on systemic risks and data exchanges. In one direction, decisions on temporary bans of financial products (by an ESA) and various bank capitalization ratios, for example, have macroprudential dimensions which necessitate a close coordination with the ESRB. In the other, the ESRB Board envisages that the ESAs will more broadly contribute to systemic risk monitoring through joint submissions of cross-sectoral risk assessments; the ESAs' contribution would be built into the governance structure through their participation on the ESRB General Board. Eventually and depending on the implementation process, a clarification of the respective mandates may be needed. The ESAs and the ESRB need to establish processes for sharing information and analyses that can feed from, and inform, risk assessments at both the EU and individual college level, for both on and off site examinations.

24. **The ESRB is dependent on the ESAs for the provision of microprudential data, which will be crucial for its oversight of the financial system**. Under the current regulation the ESRB may only submit a "reasoned" request to the ESAs to receive non-aggregated information on an ad hoc basis. The need for ad hoc and motivated requests may give rise to problems in practice, for example, if it is necessary to compare bank-specific data over time on a systematic basis. The ESAs and the ESRB are working on protocols for information sharing and should be encouraged to develop guidelines and processes for handling such requests.

25. **The ESRB is developing the institutional framework, concepts and tools to ensure macro-prudential stability at the EU level**. In close cooperation with the ESAs, it will elaborate a color-code system (dashboard) corresponding to situations of different risk levels.

D. Supervisory Colleges

26. **One step to achieve effective supervision in the EU of financial groups operating across border has been the establishment of colleges of supervisors.** In this setting supervisors competent in the jurisdictions where a financial institution belonging to a certain financial group is established (and now also the respective ESA) meet periodically in order to exchange information about the condition of the group. These colleges will enable supervisors to strengthen their working relationships with their counterparts, and to have a

much better understanding of the overall state of the institutions that they are supervising. However, since many of the largest institutions operate in a substantial number of countries, such colleges might be unwieldy: hence "core colleges" have been established, in which participation is limited to those jurisdictions where the institution has its most significant presence. Both full colleges and core colleges are operational for a number of cross border groups.

27. **Although a major step forward, these colleges are not a complete answer to the cross border supervision issue:**

- There are challenges involved in ensuring that the representation of host supervisors in the colleges is sufficiently broad: in particular, it may be difficult to include in the core college the authority of a host country where a financial institution's activity may not be very significant from the group's viewpoint even though such activity may be significant from the host country's perspective. To mitigate this concern, it should be ensured that all decisions and information from the core college are circulated among other college members;

- College meetings are time consuming, and the burden may fall on a limited number of officials. There is already anecdotal evidence of supervisory agencies declining to send representatives to meetings of colleges;

- The colleges provide a forum for discussion, but may not lead to prompt action, although, in the case of the EBA, banking colleges are required to reach joint decisions in relation to the solvency of a banking group;

- It is not always clear that the incentives are such as to maximize information sharing. While such sharing is in principle mandatory, there may be scope for information not to be brought to the attention of college colleagues, or not brought on a timely basis. For instance, as long as supervisors maintain a national focus, the authorities may be reluctant to share information about a troubled financial institution if there is concern that this could lead the authority receiving the information to ring-fence the assets of the institution. If, perhaps, a bank is preparing to downsize, it will likely focus its efforts in those places where it has problems, and supervisors may wish to protect their own jurisdictions by not volunteering information about any problems there; and

- Moreover, there are in some cases legal prohibitions on the sharing of information, so that supervisors from one member state cannot provide more than generalities about the activities of the bank/insurer they are supervising.

28. **To some extent these problems can be seen as teething troubles that will likely fade over time as the process becomes established, but a number of specific measures to enhance cross-border supervision can be suggested**:

- Collaboration on risk assessment, and adopting a common template, methodology, and scoring scales has already been developed for EBA colleges and similar approaches should be encouraged elsewhere. The risk assessment would best be carried out at the group level, within the colleges, and be interactive, structured, and detailed. One of the key challenges for the EBA will be to further harmonize the convergence on Pillar 2 (common methodologies for risk assessment);

- Collaboration in conducting onsite supervision is essential for supervisory effectiveness. It is already the case that many onsite inspections are joint between home and hosts. There could be a presumption that home supervisors would invite subsidiary and branch hosts to participate, and subsidiary hosts would invite parent home supervisors. Moreover, where the cross-border presence is significant, particularly where the supervisory agency is a member of the core college, the supervisory plan would be discussed at the college level. Participation of all relevant supervisors would also be expected. Such an approach would also serve to mitigate the concerns that have been voiced about the limitations on the powers of national supervisors in the face of branching under the European "single passport" policy. Clearly, this is a significant resource issue, but supervising financial institutions with substantial cross border activity has to be seen as resource intensive;

- Legal restrictions on the sharing of information should be identified and, to the maximum possible extent, removed;

- Agreement on *ex ante* "burden sharing" principles should be designed in such a manner that supervisors have an interest in the outcome of the institution as a whole, so that the incentives for sharing information are maximized; and

- Where there is uncertainty as to the powers of national authorities, for instance to decline giving "no objections" approval on safety and soundness grounds to a cross-border takeover, such uncertainty could be resolved through the actions of the ESAs.

29. **Cross-border activity is of course relevant not just within the EU; nearly all major EU financial institutions have substantial activity worldwide**. Insofar as institutions have less understanding of non-EU markets than of those in the EU, this increases the vulnerability of the activity. Many of the problems affecting EU institutions in the crisis originated from outside the EU. Many of the suggestions above therefore apply as much to cross border activity outside the EU as they do to activity within the EU. Joint inspections for instance are similarly useful. And convergence of regulatory regimes will help mutual understanding as to what is happening in the respective jurisdictions. MoUs with U.S. authorities, for instance, should include provisions for joint inspections on a regular basis.

30. **The establishment of "crisis management colleges" for larger cross-border banking groups is one important, but in itself limited, element of the framework**. Already some groups have been established to bring together the various institutions—supervisors, central banks, and finance ministries—that would be involved in dealing with a crisis in such a bank. Such a pre-existing network should facilitate the logistics of intervention and the negotiation of a coherent approach. However, crisis management colleges will tend to be large and therefore unwieldy. More importantly, the existence of a college will not solve the competing interests over burden sharing in cross-border banking resolution, nor does it create strong incentives for individuals to reveal vulnerabilities and failings on a timely basis.

E. The Financial Stability Work of the European Commission

31. **The EC plays a central role in proposing prudential and non-prudential regulations for the financial sector, and in overseeing macroeconomic policies that affect the financial sector.** The current legislative agenda is unusually full, with forthcoming amendments to the Capital Requirements Directive (CRD), the directive on Deposit Guarantee Schemes (DGS), the banking crisis management framework, a review of the Market in Financial Instruments Directive (MiFID), as well as measures for the implementation of Solvency II. This agenda largely represents an effort to implement lessons from the global crisis and associated internationally-agreed regulatory changes (e.g., G-20 commitments), for example, to raise the level and quality of bank capital.

32. **There has been a shift toward greater reliance on EU regulations, which have the force of directly applicable law, and to allow less room for national discretion in the transposition of directives**; the aspiration is to achieve a "Single Rule book." The shift is motivated by the need to equip the EU financial sector with a consistent set of core supervisory rules, so as to further strengthen EU financial stability. Differences that stem from exceptions, derogations, additions made at national level, or ambiguities contained in directives that have a material impact on the market, that are not as stringent as the minimum core standards, or that may induce competition distortions or regulatory arbitrage, will be identified and removed. However, the rules need to be designed to allow flexibility for the sake of proportionality and to deal with differences in economic conditions across the EU: especially where monetary and fiscal policies are constrained, there may be good reasons to differentiate other policies, for example, for macro-prudential purposes, though as noted above, coordination of such policies will remain essential and could be handled by the ESRB (see below).

F. Cross-Institution Coordination

33. **Interagency coordination is effected through a Joint Committee**. This is composed of the Chairpersons of the ESAs and staff from the ESAs who are responsible for coordinating the work of the three ESAs on cross-sectoral issues and on the supervision of

financial conglomerates. As the three ESAs could, in theory, take different positions on the same issues, which could allow room for regulatory arbitrage, the work of the Joint Committee will be important to bridge the gap with the ESRB, and address underlaps and overlaps.

34. **In this context, consumer protection concerns will need to be given due attention**. All three ESAs have the same consumer protection mandate, which might on the one hand create overlaps and inconsistencies among them and on the other may lead to inaction and weaken the sense of ownership on the part of each ESA. Moreover, the financial crisis has re-emphasized the connection between consumer protection and systemic stability. To ensure that these issues are effectively addressed, the European system needs to accommodate differences across countries in responsibility for consumer protection: some unify prudential and consumer protection responsibilities, others have a "twin peak" model and will require that the ESAs will have to coordinate across agencies.

III. EU Financial Policy Issues

A. Crisis Management and Bank Resolution

35. **Establishing a comprehensive EU framework for resolution and crisis management is necessary to fill a remaining gap in the current financial stability framework**. To underpin the single financial market, resolve the mismatch between the banking passport and national fiscal responsibilities, and align national interests toward financial stability in the EU, setting up a unified framework would be the preferred approach. Such a framework should involve the establishment of a European Resolution Authority with associated financing and fiscal backstops, encompassing ex ante rules to fund resolution of financial institutions, through contributions from the industry and pooled fiscal resources in the event that temporary public financial support is necessary; this would also avoid distortions of competition policy at the national level, as compliance with state aid rules would have been cleared at the ESA level.

36. **There does not appear to be sufficient political support to make the quantum leap to an EU wide unified setup.** Working within this constraint, the Commission outlined in a consultation document of October 2010 a more gradual approach toward building a comprehensive EU framework for resolution and crisis management that will apply to all credit institutions and some investment firms. The first phase consists of a legislative proposal aimed at giving national authorities a common minimum set of resolution tools,

which is expected to be adopted by the Commission in fall 2011, while adoption by the European Parliament and Council is expected by the end of 2012.[15]

37. **The enhancement of the resolution toolbox envisaged by the Commission broadly goes in the right direction**. The aim is to reduce the frequency and severity of banking crises by ensuring that early remedial action is taken, shareholders and other relevant stakeholders have a greater role in burden sharing—thereby reducing the risk of loss for others including governments—and introducing features that facilitate resolution when it is unavoidable. The Commission's plans would require Member States to ensure that national authorities have an effective range of options for early intervention, attempting to strike a balance between financial stability concerns at the one hand and the need to minimize interference in property rights at the other, and mitigating legal risks deriving from the interference with such rights. Due consideration is also given to the need to coordinate certain elements at the global level, such as on the application of statutory bank debt restructuring or "bail-in."

38. **In a few areas, clarification is still warranted**. For instance, the Commission consultation argues that the general rule should be that failing banks should be liquidated under the bankruptcy code through ordinary (or slightly modified) liquidation rules, and that they should be resolved using special resolution tools (such as transfers of assets on a wholesale basis) only as a going concern and only if the public interest of financial stability is at stake; however, there seems a strong case that special resolution tools should be available more broadly, also in the bankruptcy process to allow an orderly liquidation, and for both systemic and non systemic institutions.

39. **While the Commission intends to review the EU crisis management framework with a view to possibly establishing an integrated regime in 2014, the authorities must be able to take appropriate measures in the interim if problems arise in cross border institutions.** The Commission consultation envisages that group-level resolution plans will be developed by resolution colleges under the leadership of the home country authority and with a strong coordination role for the EBA; such plans would include measures for a coordinated resolution of cross-border group entities, with losses being absorbed by private stakeholders. For EU cross-border banks having a significant presence outside the EU (or for EU sub-groups that are part of global financial conglomerates) such plans should be developed with relevant third countries authorities, to ensure coordination in the resolution process and, ultimately, mutual recognition of resolution measures. It would be useful for the above mentioned resolution plans to be developed soon, well before the 2014 review.

[15] Further steps will include a study and, if appropriate, a legislative proposal for full harmonization of bank resolution and insolvency regimes and, in 2014, an integrated framework, possibly centered on a European Resolution Authority.

40. **A framework for intra-group financial support also deserves consideration,** provided that the complex underlying legal and economic challenges are addressed. The Commission envisages in its recent consultation that group financial support agreements be concluded among the various group entities in case of troubles affecting the financial stability of the group as a whole. Such a framework may provide a useful tool to facilitate private funding of troubled groups and may give an early intervention mechanism that stabilizes the financial soundness of the groups. Again, the EBA could play a role in facilitating joint decision.

41. **Agreement ex ante on principles for specific burden sharing is necessary for a fully satisfactory resolution regime**, given that, due to market failures, temporary funding of a resolution by Member States might be necessary.[16] In particular, the resolution plans discussed above should provide for ex ante burden sharing principles, with appropriate participation by national fiscal authorities. Any agreement on burden sharing should cover both the financing of restructuring and the allocation of any net costs. Reaching agreement may be difficult, but if the resolution framework is to reduce the expected cost to government from bank failures, the effort will be well worthwhile.[17]

42. **Two elements of the new regime have an important bearing on the effectiveness of the financial stability framework: bank creditor bail-ins and sovereign risk**. While the framework for bank creditor bail-ins is being discussed in a global context (FSB), uncertainty about its parameters and timing is complicating current crisis management. In addition, the explicit recognition of the need for market discipline on sovereign borrowing has important ramifications for the approach to risk weighting of government debt on the books of financial institutions. Clarifying how both will be handled is urgent and seems essential to help resolve current conjunctural strains.

Deposit guarantee scheme

43. **There is merit in having an integrated framework for crisis management that would be interlinked with a pan-European deposit insurance scheme**. A gradual approach is now being pursued, in which it remains the primary responsibility of the member States to ensure that depositors are duly compensated through the national DGSs. The amendments to the DGS directive, which are currently under negotiation in the Council and the European Parliament, need to be supportive of the overall crisis management framework. To this end, certain features that would strengthen the existing framework (discussed below)

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[16] See IMF, "*Resolution of Cross-Border Banks—A Proposed Framework for Enhanced Coordination,*" 2010.
[17] There is a need also to improve the framework for managing crises in global banks. Within the EU, however, there is more scope for making progress because the Member States are committed to cooperate with each other indefinitely and on a wide range of issues.

are especially important; it is welcome that many of these elements are being covered in the proposed amendments:

- The DGS should be adequately pre-funded, and have ready recourse to additional funding if needed, so as to be credible and to avoid a pro-cyclical increase in contributions during a time of stress;

- The DGS should be structured to work seamlessly with resolution funds. DGS resources should be available to finance the resolution of banks, for example, through a purchase and assumption (P&A) operation, on condition that insured depositors and the DGS itself are not thereby made worse off;

- In case of bank failure, depositors should be paid out very quickly.[18] Depositors should be aware of this and other key features of the scheme;

- Private ownership of DGS raises conflict of interest issues that may give rise to constraints on the flow of confidential information in a way that ultimately may hinder resolution efforts;

- Depositor preference could be considered, so as to reduce potential costs to the taxpayer;

- DGS coverage should be sufficiently high but limited so as to cover most depositors and not weaken market discipline unnecessarily. Also, the level of coverage should be uniform in order to avoid competitive distortions within the single market; and

- The DGS and the resolution funds are complementary, and so establishing a single decision making structure will be helpful in achieving a least cost resolution.

B. Financial Stability, State Aid, and Competition

44. **The EU has had to adapt its rules on state aid to take into account the exceptional conditions generated by the global financial crisis**. The Treaty on the Functioning of the European Union contains strict limitations on state aid being used to distort competition and the internal market, but also allows some derogation when a country's economy is subject to a serious disturbance. With this justification in mind, the European Commission has issued a series of Communications[19] defining how it will assess

[18] With perhaps an exception for deposits that are in dispute. The Commission earlier proposed payout within seven days of a failure.

[19] http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/499&format=HTML&aged=0&language=EN&guiLanguage=en

state aid to the financial sector in the context of the current financial crisis. These communications emphasize the temporary nature of the crisis; the objective of ensuring that institutions receiving aid are viable and are quickly restored to a condition where they can safely operate without aid; the need to take into account systemic stability and the maintenance of credit flows; and the desirability of containing moral hazard by ensuring that shareholders assume a large share of the costs associated with the restructuring of the troubled institution and do not unduly benefit from the aid received. Against this background, the Commission has issued rulings on numerous cases of state aid to individual financial institutions and sectoral support schemes.

45. **The European authorities are working to formulate a more permanent special framework for state aid in the financial sector,** in recognition of certain special features of the financial services industry: the financial sector plays a unique systemic role in the economy, but it is also subject to systemic vulnerabilities and very sudden crises.[20] The financial sector is heavily regulated for prudential purposes, and is protected by certain safety nets, such as a DGS, the availability of Emergency Liquidity Assistance, and, in some countries, a Financial Stability Fund or a resolution fund.

46. **More specifically, a dedicated regime for state aid to the financial sector should acknowledge systemic stability concerns,** which recognize that:

- Risk is reduced by diversification of sectoral and country exposures. A business line or subsidiary that is "non-core" can contribute to stability if its returns are not strongly correlated with those of other business lines;

- The effect on a bank's margin of support received by an institution is ambiguous. A stigma may attach to receiving state aid, such that the recipient's marginal funding and capital costs are high; on the other hand, a bank may benefit from the public's perception of state support;

- Support for one institution could sometimes have positive spill-over effects on others, for example, by underpinning investor confidence; and

- Moral hazard factors are already pervasive in the financial sector, even in the absence of an institution requiring state aid; prudential regulations and mechanisms already go some way to limit this effect. For example, a systemically important financial institution (SIFI) may be subject to a capital surcharge or a higher levy in part because it may well be rescued if it gets into difficulty. Such a measure serves to

[20] The Commission is preparing a policy paper (due by end-2011) on the permanent framework for state aid in the financial sector, which would apply from 2014 after a transitional period.

achieve a similar objective to that of the state aid regime, and indeed a degree of burden sharing with shareholders is achieved in advance.

47. **The speed with which financial crises can develop suggests that the operational procedures for assessing state aid need to be implementable under very tight deadlines.** In some cases it may be necessary to provide assistance in a matter of days, and a delay to review acceptability under state aid rules could be very costly.[21] So far, the European Commission has always managed to decide on assistance within the market constraints on timelines since existing procedures are already made sufficiently flexible in this respect. However, also during normal times, and not just during a crisis, it will be useful to validate in advance the pricing of assistance that is available from various standing facilities, such as a bank resolution fund. In the absence of such standing facilities, emergency state aid to a financial institution could be presumed to be acceptable, but subject to *ex post* review and possible correction in line with the predetermined principles.

48. **The new bank resolution regime, by facilitating earlier and more market-based restructuring of problem banks, should reduce but not eliminate the need for a regime for state aid to the financial sector**. The two regimes should be consistent with each other, so that, for example, principles applied to divest activities under early intervention should not contradict the principles of bank restructuring under the state aid regime. State aid has been interpreted widely, to encompass also temporary government financing or guarantees to facilitate restructuring. Moreover, such assistance may turn into losses for government if the restructuring does not succeed and/or an appropriate remuneration for the State funds has not been paid. Lastly, the circumstances under which the financing from a compulsory DGS or a bank resolution fund would count as state aid should be clarified. The Commission will need to ensure that the effectiveness of its crisis management framework is not undermined by other EU rules and directives that were largely developed before the recent financial crisis and may not fully recognize the implications of the crisis for effective resolution. This could include the Financial Collateral Directive, in respect of termination rights.

49. **A dialogue with prudential regulators and supervisors is advisable**. Competition and prudential authorities may have parallel responsibilities in areas such as the vetting of major acquisitions and changes in ownership. They may also have complementary information, for example, on competition between banks and nonbanks and the scope for cross-border entry. Competition authorities need to take prudential regulations into account in assessing what is a "normal" balance sheet structure and what action is needed for a weak bank to become securely viable, because meeting prudential norms is one element of viability.

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[21] There is a parallel with rules for bank intervention: normally, intervention is not subject to a stay of execution, and ex post judicial recourse may lead to compensation rather than reversal of the action.

C. Macroprudential Instruments

50. **The institutional structure for the implementation of macroprudential instruments remains decentralized at the Member State level.** Macroprudential policies should be calibrated mostly based on country-level macro-financial conditions. In some countries work is advanced in developing a macroprudential framework, although in others this is still at an early stage of development. Nonetheless, there is a strong case within the EU for coordination through an EU institution (e.g., the ESRB) to deal with single passport and home-host concerns.

51. **One area in which the ESRB's powers could be usefully expanded is that of the coordination of macroprudential tools and ensuring their consistent application across borders,** so as to limit the scope for regulatory arbitrage as well as for leakage, and ensure that similar products are treated similarly for all institutions. The ESRB could take a more proactive role in issuing recommendations to the Commission, as part of the harmonization of national regulatory frameworks, regarding the set of available instruments to be used for macroprudential purposes by the national authorities; similar considerations apply to the imposition of loss absorbency requirements for globally systemic financial institutions. ESRB guidelines would then help operationalize these macroprudential instruments. The tool-box of macroprudential instruments available to the authorities should be easy to implement and to enforce, be effective in mitigating macroprudential risks, have limited distortionary effects, and not result in regulatory arbitrage. Given that systemic crises can originate from various segments of the financial sector (banks, non-banks such as hedge funds, insurance companies), a range of macroprudential instruments should be available for each of these segments. Since possible challenges to financial stability are diverse, one can imagine that instruments might need to be applied to specific institutions, to sectors of the financial system, to regions within a country, regions cross-border, nationally or more widely. A broad range of macroprudential instruments (such as was earlier prepared by the ESRB) should be available to the authorities. If a Member State wishes to apply a macroprudential tool and wants to secure reciprocity from an institution operating in its territory but not subject to its national supervisory oversight, it could submit a proposal to this end for approval to the ESRB.

52. **Recommendations on the design of the macroprudential instruments and their calibration should ideally be binding on the Member State**. The role of the ESRB could be substantially enhanced, potentially as part of 2014 review that the Commission intends to conduct in 2014 on the new EU financial stability framework, to define the set of instruments and the range over which they may normally be applied, or to review macroprudential measures introduced at a national level with a view to ensuring reciprocity (similar treatment for all institutions performing a particular activity). Nonetheless, careful consideration will need to be given whether it will be possible under the existing EU legal framework to confer upon the ESRB such binding powers toward Member States. A "comply or explain" regime

in this regard, analogous to that in place concerning its warnings, would be a weaker alternative.

53. **For banks, the set of instruments to be included in a macroprudential legal framework should encompass a broad range of tool.** addressing both the demand and supply of credit. Work is ongoing to identify and put in place a comprehensive set of instruments. Amongst the instruments that might be included are:[22]

- A *countercyclical capital buffer*, where the overall buffer for internationally active banks should be a weighted average of capital add-ons set by national jurisdictions, with weights based on the geographic composition of a bank's portfolio of exposures, as under the Basel III approach. The EU Capital Requirements Directive (CRD4) implementing Basel III should set an ambitiously high common bar that enhances the safety of the European financial system. At the same time, it should allow sufficient scope for the calibration of macroprudential instruments such as countercyclical capital buffers to cope with asynchronous credit cycles, and recognize that there may be still a need for the ESRB to issue recommendations and endorse the introduction of other macroprudential tools. The countercyclical capital buffer has some limitations: (a) there will be long lags in implementation (banks are likely to have one year to adjust their countercyclical buffers); (b) it is a fairly complex instrument; (c) its effectiveness remains untested.

- *Limits on loan-to-value ratios* could form part of the policy toolkits of national macro-prudential authorities to allow a swift reaction to emerging risks in real estate markets. Existing experience with limits on LTVs suggests that this measure can be effective in dampening mortgage credit growth and in slowing house price appreciation. As with the limit-to-debt ratio below, to prevent regulatory arbitrage, such limits should be applied not only to banks but to non-banks as well. To avoid circumvention through cross-border lending, such limits could be reviewed by the ESRB, which could have the power to ensure reciprocity.

- *Limits on debt-to-income ratios* could be considered as a macro-prudential instrument. They would help ensure that borrowers have the ability to repay their mortgages. The experience of some countries that have relied upon such limits on DTI for a long time (e.g., France) should prove useful in designing and calibrating this instrument.

- *Measures to address the cross-sectional dimension of systemic risk* could also be included, such as capital or liquidity surcharges, risk-weighted instruments, or levies on SIFIs.

[22] Some of these measures could apply to non-bank lenders.

54. **For non-banks such as hedge funds, possible additional macroprudential measures include**:

- *Margins or valuation haircuts* on securities used as collateral in the securitized lending markets (such as repo markets). This instrument would be used to regulate the supply of secured funding. It could also mitigate the pro-cyclicality of the shadow banking system by affecting their funding conditions given that most source their funding in the wholesale markets.

- *Leverage limits*. A leverage ratio in the hedge funds sector could help dampen lending exuberance. The EU directive on Alternative Investment Fund Management already gives an advisory role in this regard to the ESRB. However, the draft regulation on a ban of short selling and naked CDS currently does not include any role for the ESRB, which instead is given to ESMA.

55. **For insurance companies and pension funds, there may be a need to identify more specialized measures**, for instance in relation to the low long term interest rates and longevity risk, and risks associated with derivative products.

D. Data Adequacy

56. **An important aspect of the new European supervisory architecture regards its ability to eliminate data gaps and foster an efficient flow of information between its various components**. Compiling and disseminating appropriate information on risk exposures and interconnections among institutions is a precondition for the establishment of an effective framework targeted to achieve stability in the financial system. The framework should ensure vertical (across the three layers) as well as horizontal (within members in each layer) distribution of data and information in general. While an effective framework that protects the confidentiality of information needs to be put in place, maximum data sharing should be the goal: lack of data or lack of data sharing should be eliminated as a potential cause of the next crisis.

European Supervisory Authorities

57. **The regulation establishing the ESAs entitles them to obtain access, via European and national counterparties, to all the information necessary to conduct their activities**. While it is clear that information having a micro-supervisory purpose may be obtained by ESAs, there is more uncertainty over the possibility of the ESAs gaining access to supervisory data that could be used for risk assessment purposes.[23] For example, whereas

[23] The legal ambiguity derives from the fact that existing provisions require that supervisory data cannot be used for purposes other than strict supervision. ESAs, however, are mandated to perform risk assessment exercises beyond pure supervision.

the EBA has indicated it will have access to all confidential data available to national supervisors on a regular basis, EIOPA is facing opposition in its efforts to obtain all detailed data necessary for the implementation of Solvency II. Reportedly, national securities market regulators are, citing a range of obstacles, reluctant to share data on individual financial transactions with ESMA.[24] In addition, it is still unclear whether ESMA will be able to use its supervisory data on CRAs internally for the purposes of risk assessment. This may in turn have implications for the information that can be shared with the ESRB.

58. **Achieving comparability of financial data across all Member States is important for micro and, *a fortiori*, macro-prudential supervision**. ESAs will play a central role in this process, since they will be responsible for creating and updating common reporting templates for their respective sectors. As an example, the EBA is to prepare harmonized data reporting systems for implementation by end of 2012 which will be applied by national supervisors to banking companies.[25] Similarly, EIOPA is developing a fully harmonized reporting framework to meet requirements under Solvency II which would enhance the availability of supervisory information on insurance firms. Finally, ESMA is developing a centralized system to collect data on CRAs.[26]

59. **In order for common reporting to be effectively applied:**

- The ESAs should implement such systems through binding technical standards (in the form of regulations), enforcing their consistent application across all national supervisors;
- The ESAs will likely need to conduct periodic revisions of the reporting templates to ensure they are kept updated and sufficiently flexible to rapidly incorporate information on evolving financial products and risk factors; and
- The ESAs should ensure a high degree of coordination in the design and implementation of reporting systems, so as to reduce the reporting burden and avoid duplication of efforts. [27]

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[24] These data are currently available in the Transaction Reporting Exchange Mechanism (TREM), which was created in 2007 by CESR–ESMA's predecessor.

[25] In order to achieve full consistency in the application of current Common Reporting (COREP), the EBA is working on the definition of uniform reporting formats according to Art. 74 of Directive 2010/78/EU of November 24, 2010. This common reporting system will become effective on December 31, 2012. In order to ensure uniform conditions of application of this Directive, the EBA is required to develop implementing technical standards to introduce, within the Union, uniform formats, frequencies and dates of reporting before January 1, 2012.

[26] This central repository (CEREP) requests CRAs to make available public information on their historical performance including the ratings transition frequency and information about credit ratings issue in the past.

[27] Even small differences in the reporting format and timing can add significantly to regulatory burden.

European Systemic Risk Board

60. **The ESRB will not have direct access to all the data necessary to conduct its activities.** It will depend heavily on the collaboration of the ECB, which has the resources and capabilities to provide analytical as well as statistical support. Notwithstanding, there are legal constraints preventing full sharing of confidential information between the two institutions, particularly on information that is not in summary or in aggregate form. The ESRB is also expected to rely on the ESAs and Member States for data derived from supervisory sources and also for "soft" information for its macroprudential analyses. This type of information will normally be aggregated.[28]

61. **There is concern that the relevant authorities may not be willing to share institution-specific data with the ESRB**. As noted above, the ESRB regulation stipulates that requests from the ESAs for confidential data on individual institutions may only be made on an *ad hoc* basis and must be justified on the basis on prevailing market conditions; this may limit access to sensitive microprudential data. Besides these legal constraints, the broad range of parties involved in the ESRB's governance structure increases the risk of leakages of confidential information.

62. **The ESRB will need to build its reputation and develop solid relationships with other institutions to gain trust and thus increase its access to information**. By giving stakeholders a higher degree of participation in its activities, it can be expected to build up the initial reputational capital necessary to facilitate its future engagement with the national bodies. For example, the ESRB will attempt—through its Advisory Technical Committee—to capture through a so-called "bottom-up" approach, evidence on risks and vulnerabilities, also to complement the analytical input from the ECB, which is based on a "top-down" approach.

E. Direct Regional Supervision: The Rating Agencies

63. **On 1 July 2011, CRAs will be the first cross-border financial institutions in the EU licensed and supervised by a supranational agency**—ESMA—and to this end, ESMA has been endowed with a comprehensive mix of supervisory tools. If ESMA manages to instill a supervisory culture and implement supervisory tools tailored to cross border entities, it could pave the way to possible future centralized supervision of financial markets and/or institutions in the future.

64. **ESMA will have the right to request a broad set of reports and returns, and also conduct on-site inspections**. Hence, it is developing reporting templates and systems on CRAs that will facilitate the processing, monitoring and analysis of the prudential

[28] For example, the EBA must provide information on Key Risk Indicators to the ESRB on a regular basis.

information received. A central repository (CEREP) will gather all the information for prudential purposes. Part of the information will be made public, on an aggregated and bi-annual basis (as from summer 2011); published information will include CRAs' performance indicators, including rating actions (downgrades/upgrades), defaults, and transition matrices. ESMA can also access staff and management, and can conduct on-site inspections, which may help enhance its credibility as well as its effectiveness.

65. **ESMA can impose stringent fines, according to a comprehensive list of breaches attached to the regulation**. It can also require corrective measures, including suspending the use of credit ratings for regulatory purposes, issuing a public notice, temporarily prohibiting the credit rating agency from issuing credit ratings and, as a last resort, withdrawing the registration when the credit rating agency has seriously or repeatedly infringed the regulation. With regard to accountability, ESMA will present its annual report on fines and corrective measures to the EU Commission, Parliament and Council.

66. **ESMA will possess its own budget for the supervision of CRAs**. While the calibration of the fee is still under discussion (secondary legislation on fees is to be adopted by the EU Commission), the Commission should only set a minimum and a maximum percentage, to give some leeway to the Authority and at the same time establish criteria that ensure a degree of predictability.

67. **The accumulated delays in hiring staff and preparing tools and methods for supervision at ESMA' may hinder its efforts to establish credibility for its supervisory function quickly**. By the end of 2011 ESMA is expected to have 15 staff working on CRAs. While supervision legally starts in July 2011, it will initially apply to a narrow set of entities; only four rating agencies—including none of the three largest ones—had been registered as of May 2011. The delay was due mainly to the complexity of the license applications, and the continued functioning of a collegial procedure (where ESMA was an observer and not the licensing authority) on a transitional basis. The largest CRAs are now expected to be registered by the summer. Meanwhile, ESMA is undertaking an intensive recruitment process.[29] A balance between supervisors and former private sector practitioners should be an objective in order to ensure the build-up of a supervisory culture and independence from the industry.

[29] Staffing and preparation are currently speeding up. While 3 experts were working on CRAs in 2009, the team reached 5 experts in May 2011. The unit should reach 15 staff members by the end of 2011, and 35 by end-2012.

APPENDIX I: DETAILS OF CURRENT INSTITUTIONAL ARRANGEMENTS

The European System of Financial Supervisors

68. **The main objective of the ESFS is to ensure that the rules applicable to the financial sector are adequately implemented to preserve financial stability and to ensure confidence in the financial system as a whole and protection for the customers of the financial services**. The ESFS comprises the ESRB, the three new supervisory authorities (EBA, EIOPA, and ESMA), the Joint Committee of these supervisory authorities, and the national supervisory authorities.

European Supervisory Authorities

69. **The ESAs are entrusted with the following main tasks**:

- To contribute to the establishment of high-quality common regulatory and supervisory standards and practices, in particular by providing opinions to the Union institutions and by developing guidelines, recommendations, and draft regulatory and implementing technical standards;

- To contribute to the consistent application of legally binding Union acts, in particular by contributing to a common supervisory culture, ensuring consistent, efficient and effective application of the Union acts, preventing regulatory arbitrage, mediating and settling disagreements between competent authorities, ensuring effective and consistent supervision of financial institutions;

- To promote a coordinated European Union supervisory response and contribute to the stability of the financial system of the European Union in close cooperation with all other ESAs and the ESRB;

- To organize and conduct peer review analyses of competent authorities, including issuing guidelines and recommendations and identifying best practices, in order to strengthen consistency in supervisory outcomes;

- To ensure the coherent functioning of colleges of supervisors and taking actions, inter alia, in emergency situations; and

- To contribute to providing a high level of protection to consumers and beneficiaries of financial services and products in its area of competence.

70. **Basic acts such as the main sectoral directives and regulations (e.g., CRD, MiFID, Solvency II) can only be adopted by the EU legislators** (i.e., the European Parliament and the Council) on the basis of a proposal by the European Commission. In areas specified in these acts, the ESAs and the Commission are delegated the power to adopt rules

that either further develop (regulatory technical standards) or implement (implementing technical standards) the basis acts. As regulatory agencies, the ESAs' powers are limited to drafting these standards; while European case law requires that the Commission retains the formal regulatory power, and that it ultimately endorses them to give them binding legal effect.

71. **Each ESA is governed by its Board of Supervisors, which integrates the relevant national authorities in the field of its competence in each Member State**. The Management Board, a subgroup of the Board of Supervisors, ensures that the ESA carries out its mission and performs the tasks assigned to it. The ESA is represented by a Chairperson, elected for a five years term that can be extended once by the Board of Supervisors following a pre-selection by the European Commission and confirmation by the European Parliament in public hearing. The Chairperson is responsible for preparing the work of the Board of Supervisors and chairs its meetings as well as the meetings of the Management Board. The Executive Director appointed by the Board of Supervisors for a similar term as the Chairperson is in charge of the management of the ESA and is responsible for the implementation of the annual work program under the guidance of the Board of Supervisors and the control of the Management Board. At the moment, national authorities predominate amongst the Board of Supervisors members, and have all the votes, which may under-weight EU-wide interests and considerations that are not favored by member-states authorities.

72. **When carrying out the tasks conferred upon it by the Regulation, the Chairperson and the voting members of the Board of Supervisors are to act independently and objectively in the sole interest of the Union as a whole** and shall neither seek nor take instructions from Union institutions or bodies, from any government of a Member State or from any other public or private body

73. **Peer Reviews are mandated to help monitoring the implementation of supervisory provisions set out in Community Legislation and in the ESAs' measures, as well as to monitor convergence in supervisory practices**. The Review Panel aims at encouraging a timely and consistent day to day application of all the above and at enhancing supervisory convergence within the European Economic Area (EEA).

74. **Stakeholder groups are established to facilitate the ESAs' consultation with stakeholders in Europe**. The stakeholder groups, each comprising of 30 people, include representatives of the industry, consumers and beneficiaries as well as academics. [30]

[30] The ESAs will need to consult with a narrower circle of respective industry representatives on technical issues.

75. **The ESAs have an autonomous budget**, with revenues coming from national supervisory authorities and the General Budget of the Union. The Union budgetary procedure is applicable and the auditing of accounts is undertaken by the Union's Court of Auditors.

76. **The fact that ESAs have legal personality, autonomy and binding powers makes it essential that they are accountable to the European Parliament and the Council**. Decisions taken by the ESAs may be appealed by the addressee or any natural or legal person directly and individually concerned by that decision, by filing an appeal to the competent ESA. The Board of Appeal, which is a joint body of ESAs, independent from their administrative and regulatory structures, shall decide within two months, which decision can be contested before the Court of Justice of the EU.

77. **To prepare their statements and documents and to carry out their technical work, the ESAs have set up a number of Working Groups** consisting of experts from the national supervisory authorities, and to which other stakeholders contribute from their expertise and insight. These Working Groups relate closely to the respective ESAs' work programs.

78. **The ESAs are successor institutions of the "Level 3 Lamfalussy Committees" of supervisors.** The formation of the ESAs was thus a continuation and enhancement of the pre-existing committees. The ESAs' regulations provide for continuity of the Committees' work including the transfer of their existing staff. For both EBA and EIOPA the total assigned number of staff will be around 60 experts in 2011 increasing to around 100 in 2013; and around 70 in 2011 rising to 130 for ESMA.

The European Systemic Risk Board

79. **On January 1, 2011, the ESRB was established as the new EU independent macro-prudential entity**.[31] The structure of the ESRB comprises a General Board, a Steering Committee, a Secretariat, an Advisory Scientific Committee (ASC) and an Advisory Technical Committee (ATC). Members of the Board with voting rights (with one vote each) include the President (Chair), the Vice-President of the ECB, the Governors of the national central banks, a member of the Commission, the Chairs of the European Supervisory Authorities (ESAs), the Chair and two Vice Chairs of the ASC, and the Chair of the ATC (37 voting members and 27 non-voting members[32]).

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[31] Regulation No. 1092/2010 of the European Parliament and of the Council of November 24 of 2010 and Council Regulation No.1096/2010 of November 17 of 2010.

[32] The voting members of the General Board are the President and the Vice-President of the ECB, the Governors of the national central banks, a member of the EU Commission, the Chairs of the ESAs, the Chair and two Vice Chairs of the ASC, and the Chair of the ATC. The non-voting members are the high level representatives of the national supervisory authorities, and the president of the EFC.

80. **The ESRB's oversight includes all financial institutions, shadow banks, markets, products and infrastructures**. It is tasked with the mitigation of system-wide risks of financial instability. The ESRB shall monitor the financial system, and identify and assess risks of instability that may affect the financial system as a whole. The ESRB is to issue risk warnings when risks are deemed significant, and when necessary, provide policy recommendations to mitigate or address the risks identified. Warnings and Recommendations can be of a general or of a specific nature, and be addressed to the European Commission, to specific Member States, to the ESAs, or to one or several national supervisory authorities. The ESRB is also responsible for the implementation in the EU of the recommendations of the IMF, the BIS and the FSB to the G20, and of the coordination of its actions with International Financial Institutions and with relevant institutions in non-EU countries on macro-prudential oversight matters.

81. **The ESRB reports at least annually to the European Parliament and the Council, marking the publication of its annual report, and more frequently in the event of widespread financial distress**. Where appropriate, the European Parliament and the Council invite the ESRB to examine specific issues to financial stability. The European Parliament may request the Chair of the ESRB to attend a hearing of the competent Committees of the European Parliament and the Chair of the ESRB shall hold confidential oral discussions at least twice a year behind closed doors with the Chair and the Vice-Chairs of the Economic and Monetary Affairs Committee of the European Parliament.

82. **The ESRB does not have a legal personality**. It has no binding powers, and enforcement of recommendations will depend on the good functioning of a "comply or explain" concept. To enhance its influence and legitimacy, warnings and recommendations addressed to national authorities will be transmitted, subject to confidentiality, to the Council, the Commission, and the ESAs. Moreover, the ESRB may make warnings and recommendations public where appropriate. Policy recommendations will specify a timeline for the relevant policy response by the body to which the warning is addressed, and it will be the responsibility of the authority to which the ESRB sends a warning to act on it, or to provide a justification in case of inaction. If a recommendation has not been followed or the addressees fail to appropriately explain their inaction, the ESRB shall inform the Council and when relevant, the ESAs. The regulation foresees an explicit role for the European Parliament in the follow-up of ESRB recommendations when they are made public.

83. **The headcount of the ESRB Secretariat as of May 2011 is approximately 25 staff members, about half ECB staff and half from national central banks**. The ECB has recruited 35 staff from NCBs to deal with ESRB-related issues. The EBA has provided resources to working groups. More broadly, the ECB provides analytical, statistical, administrative and logistical support to the ESRB. As a center of knowledge in the euro area, the ECB analytical power is crucial for the ESRB. The ESRB can also count on its stakeholders' contributions through its related sub-structures, such as working groups with

the ESAs, and Committees such as the ATC and the ASC providing for crucial analytical tasks and independent reviews of strategies by distinguished academics.

The financial stability work of the European Commission

84. **The EC plays a central role in setting prudential and non-prudential regulations for the financial sector, and in overseeing macroeconomic policies that deeply affect the financial sector.** The Commission has the 'right of initiative', i.e., the Commission alone is responsible for drawing up proposals for new European legislation, which it presents to Parliament and the Council. Thus, the Directorate General (DG) for the Internal Market and Services manages the process of formulating and issuing new financial sector directives and regulations, in consultation with the ESAs, national authorities and market participants. [33]

85. **The current agenda is unusually full**, with forthcoming amendments to the Capital Requirements Directive (CRD), the directive on Deposit Guarantee Schemes (DGS), the banking crisis management framework, a review of the Market in Financial Instruments Directive (MiFID), and implementation of Solvency II. This agenda largely represents an effort to implement lessons from the global crisis and associated internationally-agreed regulatory changes, for example, to raise the level and quality of bank capital. Moreover, to strengthen the reforms of the European supervisory architecture, initiatives have been launched to work toward a "common rulebook." This should provide a common legal basis for supervisory action in the EU - ensuring strengthened stability, equal treatment, lower compliance costs for companies as well as removing opportunities for regulatory arbitrage. Such efforts do not require full harmonization of all aspects of EU legislation, but rather focus on one harmonized core set of key standards. Indeed, some flexibility needs to be maintained for the sake of proportionality and to deal with differences in economic conditions across the EU: especially where monetary and fiscal policies are constrained, there may be good reasons to differentiate other policies, for example, for macro-prudential purposes.

86. **The EC's responsibility to safeguard the internal market implies that it oversees state aid to the financial sector, and also mergers**. The DG for Competition has had to pay increasing attention to the financial sector as governments reacted to the global crisis by introducing facilities to support the financial sector.

87. **The DG for Economic and Financial Affairs oversees macroeconomic conditions and policies—such as the maintenance of the Stability and Growth Pact—but is also involved in financial stability work**, such as the recent stress testing exercises. An area of increasing attention has been that of macro-financial linkages: on the one hand, fiscal and

[33] One implication is that the ESAs do not themselves have full power to set regulations in their respective areas of competence.

current account balances, and the balance sheet positions of the government and nonfinancial private sector translate into important risk factors in the financial sector; on the other, the functioning of the financial sector influences, for example, savings and investment rates, and contingent claims on government.

APPENDIX II: SUPERVISING THE INSURANCE AND PENSIONS INDUSTRIES

88. **Solvency II is in the process of replacing the current regulatory framework Solvency I in the EU and the new regime should be in place January 2013**. The process started already in 2009 with the adoption of the Solvency II Framework Directive by the European Parliament. Solvency II is based on a three pillar approach, which is similar to the banking sector (Basel II) but adapted for insurance. The first pillar contains the quantitative requirements. The second pillar contains qualitative requirements on undertakings such as risk management, as well as supervisory activities, and the third pillar covers supervisory reporting and disclosure. Solvency II will also streamline the way that insurance groups are supervised, and recognizes the economic reality of how groups operate.

89. **CEIOPS, the forerunner of EIOPA, was requested by the European Commission since the beginning of the process to provide technical advice on the vast majority of Solvency II Level 2 implementing measures**. This role has put EIOPA in the position of being a natural source for reference, standard setting and consultant authority, as is intended in the new regulatory architecture. The implementation efforts are following an approach that requires detailed regulatory and implementing standards to ensure the consistent application of the regime throughout the EU to avoid regulatory arbitrage and an uneven playing field. Training provided by CEIOPS on Solvency II will continue, enhancing the supervisory quality and harmonization. The need for cooperation among member authorities to gain understanding of the complexity of Solvency II will enhance the work of EIOPA in the coordination area.

90. **Expectations regarding EIOPA are extremely high**. Solvency II is in the final stages of becoming the official solvency regime, creating an immediate need for guidance and implementing standards. Further, the internal model approval, a challenging and crucial step for ensuring solvency will probably require strong engagement from EIOPA to ensure best practice and proper understanding by all supervisory authorities. In addition, the mandate to participation by EIOPA in the Supervisory Colleges will add expectations regarding guidance in this new field of group supervision.

91. **Proper staffing will be a critical component for the success of EIOPA and ultimately for the EU insurance and occupational pensions supervision**. The urgent need to gain credibility calls for effective and influential participation in the Colleges of Supervision and will require an adequate level of seniority in staffing, thus constraining EIOPA's ability to hire young promising talent at this stage. In addition, the high demand for actuarial and internal model resources created by Solvency II has significantly raised compensation to levels that could hit EIOPA's budgeted salary structure boundaries.

92. **EIOPA's role promoting a coordinated European Union supervisory response and contributing to the stability of the financial system of the European Union, working in close cooperation with the other ESAs and the ESRB, will be not free from**

challenges. The low interest rate environment, together with costs associated with the introduction of Solvency II, could trigger a change in the demand for the products of the insurance industry. Also, the low interest rate environment, while beneficial for other institutions in the financial sector, could accentuate a search for yield to the detriment of credit quality in the pension and long term life products.

93. **EIOPA's contribution to the evaluation of the type of systemic risk posed by the insurance industry, as well as monitoring, providing early warnings and if necessary coordinating responses in emergency situations, will be critical**. With around 30 of the largest global insurance groups domiciled in the EU, the engagement and timely evaluation of the prudential situation of these groups by EIOPA will be essential for fulfilling its mandate. Access to detailed, timely data on these groups will be required as well as strong coordination with the national authorities. Information sharing will require strong protection of confidentiality and data security, but also a cultural change in the national authorities and the willingness to share granular data on a timely basis.

94. **The Institutional and Occupational Retirement Prevision (IORP) Directive is in the process of review thus adding an important and resource- intensive task to the workload of EIOPA**. The EC has approached EIOPA with a Call for Advice on the new IORP Directive due by December 2011. The purpose of the Directive is to remove impediments to the cross border establishment of occupational pension funds. Currently around 78 of 150,000 occupational pension funds operate cross border. Valuation of technical provisions, the security of benefits, risk-based supervision, and modernizing the prudential regulation of defined contribution (DC) schemes are the main topics of discussion and possible harmonization. The fact that the design of occupational pensions remains a national decision is likely to dampen harmonization at EU level.

95. **There is a risk that the consumer protection mandate assigned to EIOPA may be relegated in the priorities**. While the mandate requires EIOPA to take a leading role in promoting transparency, simplicity and fairness in the market for consumer financial products or services across the internal market, the assigned powers appear disproportionate, for instance giving EIOPA only the option to adopt guidelines and recommendations with a view to promoting the safety and soundness of markets and convergence of regulatory practice but not regulatory standards. EIOPA may also issue warnings in the event that a financial activity poses a serious threat to the stability and effectiveness of the system; however, it is not clear what implications and actions will follow. EIOPA is also to engage in achieving a coordinated approach to the regulatory and supervisory treatment of new or innovative financial activities. This will require a close engagement with the market and access to detailed information at the individual institutions' level.

- Proper valuation of assets and liabilities will be necessary for the successful introduction of Solvency II, but current IFRS work in insurance is delayed and there are important differences, particularly as regards the valuation of the liabilities.

Solvency II valuation standards have two major areas of divergence with respect to the currently discussed IFRS. The ultimate adopted valuation will impact the application of Solvency II and could compromise the soundness of the system if too much freedom is granted.

96. **Training plans are important for the enhancement of supervision**. EIOPA has a wide range of training activities. Topics include Solvency II, accounting, consumer protection, and risk supervision. The training on Solvency II traditionally offered to supervisors in the policy departments has now moved to address operational staff needs. The development of online courses and their availability in the various EU languages is recommended.

ANNEX I: INSTITUTIONAL AND LEGAL ISSUES FROM FSAPS IN EU MEMBER STATES

EXECUTIVE SUMMARY

- **The global financial crisis has led to reform efforts in many countries to improve institutional and legal aspects of financial stability frameworks**. Within the European Union (EU), these efforts are taking place both at the regional level and in many member countries. This annex focuses on the evolving financial stability frameworks in five EU countries that have recently engaged in FSAPs and are on the list of the 25 most interconnected economies. **This annex is intended to complement the European Financial Stability Framework Exercise (EFFE) that focuses on the emerging financial stability framework at the EU level**.

- **The five FSAPs indicate a trend for Ministries of Finance (MoFs) to take on a more prominent role in financial crisis prevention and management**, inter alia through increased oversight of autonomous agencies. Such oversight can be appropriate, but should not curtail the operational autonomy of supervisory agencies. While there is no simple solution here, the operational autonomy of supervisory agencies is essential and should remain in the forefront of any institutional reform. The FSAPs call for appropriate coordination mechanisms among supervisory agencies, as well as between the agencies and the Government.

- **There is a tendency in the assessed countries to strengthen the institutional framework for macro-prudential oversight, including clear delineations of responsibilities for macro-prudential surveillance**. In this regard, there is a strong case for strengthening the financial stability mandate of central banks, by specifying a clearly defined and well integrated set of objectives, as well as the functions and macro-prudential tools to achieve these objectives.

- **With regard to micro-prudential supervision, the FSAPs have revealed weaknesses in the gathering of supervisory information** obtained via formal regulatory reporting. Moreover, further progress can be made in enhancing home-host cooperation.

- **The FSAPs revealed that bank resolution frameworks vary considerably among the five countries.** Major weaknesses exist in several countries, especially as their frameworks lack robust resolution tools. Furthermore, coordination mechanisms between supervisory agencies and MoFs, as well as between the courts, resolution authorities and supervisory agencies, need to be strengthened. Some countries have recently introduced legal reforms to improve their bank resolution framework. Problems related to cross-border resolution would likely need to be handled largely at the EU level, but the lack of *ex ante* burden sharing arrangements within the EU remains a major impediment. Particularly given the present absence of a regional

framework, steps should be taken at the national levels to reinforce coordination between national authorities regarding cross-border bank resolution.

- **Finally, the FSAPs have shown a clear need to improve various aspects of national Deposit Guarantee Schemes (DGS).** Weaknesses include inability to finance bank resolution, a lack of ex ante funding, and absence of depositor preference, which, taken all together, may make it cumbersome and time consuming for national DGSs to play an active role in bank resolution and ensure that tax payer expenses are minimized.

I. INTRODUCTION

97. **The global financial crisis has led to widespread reform efforts aimed at improving the institutional and legal aspects of financial stability frameworks; within the European Union (EU) these efforts are evident both at the regional level and in many member countries.** The interrelationship between the national and regional structures, and the ongoing moves towards fostering a single market within the EU, has generated additional dimensions to this work. The European Financial Stability Framework Exercise (EFFE) has analyzed the developments in the institutional and legal structure at the regional level. This annex complements the EFFE paper with lessons from recent bilateral exercises.[34]

98. **Over the past year, Fund staff has conducted FSAP updates for various European Union (EU) member countries**.[35] Five of these covered countries are on the list of members with systemically important financial systems for whom mandatory FSAP stability assessments, conducted every five years, have become an integral part of Article IV surveillance[36]. With the increasing convergence of the institutional structures and rules in Europe, a number of issues arising in these national FSAPs are similar across countries; some of these derive directly from decisions made at an EU level, while others relate to national responsibilities in an increasingly common external environment.

99. **This paper covers three broad areas**. The next section looks at the institutional and legal frameworks for financial stability. Section III covers issues arising in the area of micro-

[34] This Annex was prepared by a team led by Messrs. Enoch (MCM) and Jansen (LEG) and comprising also Ms. Jassaud, Mr. Verkoren and Ms. Zhou (all MCM), and Messrs. Bossu and Gullo (both LEG).

[35] Germany, Luxembourg, Netherlands, Sweden, and the United Kingdom. All the FSAP teams also included staff from the Fund's European and Legal Departments.

[36] Integrating Stability Assessments Under the Financial Sector Assessment Program into Article IV Surveillance, August 27, 2010, http://www.imf.org/external/np/pp/eng/2010/082710.pdf

prudential supervision. Section IV contains a discussion of crisis management and bank resolution issues at the national level. Finally, Section V offers some conclusions.

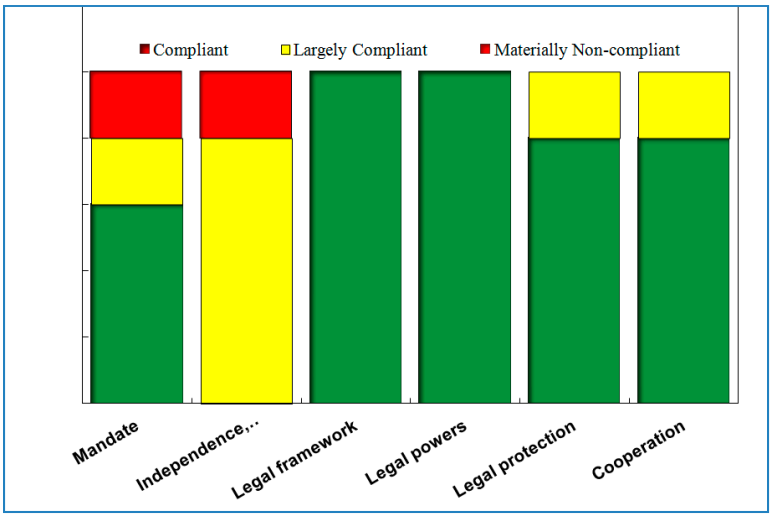
II. National Institutional and Legal Frameworks for Financial Stability

100. **The FSAPs with the EU members have demonstrated that countries are reconsidering institutional arrangements and legal frameworks aimed at promoting financial stability in light of the crisis.** Before the crisis, the institutional debate in the field of financial stability focused mainly on providing appropriate levels of autonomy and adequate toolkits for central banks and micro-prudential supervisors. The financial crisis has signaled a need s for a more comprehensive review of the mandates of central banks and supervisory agencies as well as of the coordination mechanisms between them. In the EU, this requires analysis and action at both EU and member state level. While efforts have been made to address the issue of cross-border coordination in the field of financial stability at the EU level (e.g., supervisory colleges, Winding Up Directive), individual member states continue to retain considerable responsibility for national financial stability. Accordingly, they will need to develop more robust national institutional and legal frameworks to fulfill those responsibilities.

A. Autonomy of Supervisory Agencies

101. **The "standards and codes" assessments with the EU members highlighted tensions associated with the autonomous status of supervisory agencies, and particularly their objectives, independence, and powers.** From an institutional perspective, a key lesson from the crisis is that financial stability is ultimately the responsibility of the government and that, for this reason, the government will inevitably have a leading role to play in addressing financial stability issues. The government's central role has a bearing on the design of institutional frameworks for crisis prevention—i.e., macro- and micro-prudential supervision—and crisis management, that may curtail the autonomy of supervisory agencies. At the same time, however, a balance needs to be maintained to ensure a sufficient level of autonomy for regulatory agencies at the operational level. In the recent FSAPs with EU members, a number of jurisdictions were rated "largely compliant," rather than compliant, on Core Principle 1 ("Objectives, independence, powers, transparency, and cooperation") and its sub principles (also see Figure 1). These FSAPs identified constraints on the autonomy of regulatory agencies in the areas of the rule-making process, the reporting lines vis-à-vis the political authorities, the procedure for appointment and removal of the governing bodies, the lack of clear mandates and/or insufficient independence in priority setting and insufficient resources. The recommendations from the FSAPs highlight a number of important lessons.

Figure 1. Observance of Core Principle 1 across five EU countries



- The mandates and supporting objectives of supervisory agencies should be sufficiently clear and coherent, and individual objectives should be sufficiently balanced vis-à-vis each other (for instance, prudential objectives vs. consumer protection objectives) (Sweden, United Kingdom).

- Where rules are set exclusively by the MoF the supervisory agency has autonomy only as regards implementing those rules. Under such circumstances, the rule-making powers of the MoF should focus on the broad components of the prudential framework, allowing the prudential supervisor to determine quantitative thresholds, minimum ratios et cetera (Netherlands).

- There is a need to safeguard the operational autonomy of supervisory agencies, ensuring that they can effectively withstand any undue industry and/or government interference (Luxembourg, Sweden).

- Rules for the appointment and removal of the members of the governing bodies must be set in a way that avoids undue influence in daily management (Luxembourg). Moreover, supervisory agencies should have sufficient autonomy in setting supervisory priorities and allocating resources accordingly (Sweden). There should be mandatory disclosure of the reasons for the dismissal of a supervisory agency's board member (Germany, Luxembourg).

- The internal governance framework of the agencies must allow for an efficient decision-making process to ensure that remedial actions can be taken in a timely manner. Weaknesses identified in members' frameworks do not typically relate to the range of available instruments (although the assessments highlighted some notable

exceptions (Netherlands, United Kingdom)) but to their application in practice; in some cases supervisory authorities fail to apply a "ladder" of actions, ensuring that timely and appropriate supervisory actions are taken, commensurate with the nature and seriousness of the identified issues (Germany, Luxembourg, Sweden).

- The framework for establishing the budget and setting priorities for the agency should be transparent. Priorities should be set on the basis of sound risk assessments performed by the supervisory authority, encompassing both micro- and macro risks. Frequent changes to the budget or to the priorities of the agency should be avoided (Sweden).

- The framework should provide robust legal protection for supervisors. In several countries, existing protections need to be strengthened (Germany, Netherlands, and Sweden).

102. **The strengthened role of MoFs in crisis prevention and management is likely to have an impact on the autonomy of micro-prudential supervisors.** In several of the FSAPs, officials from the relevant MoF expressed the view that regulators did not perform particularly well in the period leading up the crisis, and that there is a need for increased oversight over the autonomous supervisory agencies. (This was particularly the case in those of the assessed countries where the MoF is politically responsible before Parliament for the actions of the central bank and financial regulators.) Accordingly, MoFs will likely continue to assert a more prominent role in crisis prevention and management even into the post-crisis period in ways that may potentially undermine the autonomy of regulators.

103. **There is no simple solution to resolve the tension between the needs for government involvement and supervisory autonomy; rather it will require a delicately balanced approach**. On the one hand, institutional arrangements will have to recognize that, as is the case in the assessed countries, the minister of finance is politically responsible to Parliament for the action of supervisory agencies and for the expenditure of taxpayer money as part of interventions aimed at buttressing financial stability. On the other hand, operational autonomy for supervisory agencies is essential for the performance of their tasks, and political interference with daily management and supervisory decisions must be avoided. Moreover, supervisory agencies, as any public agency, benefit from the powers that have been conferred upon them in legislation: their authority must therefore be framed in a manner that ensures their democratic legitimacy, with related accountability and transparency requirements. Going forward, this balance may most effectively be struck through a framework consisting of the following four pillars:

- Each supervisory agency operates with functional autonomy and a well calibrated, realistic and, the extent possible, verifiable mandate;

- Those mandates are complemented by clear transparency and accountability mechanisms vis-à-vis the political authorities and the public at large,[37] as well as sufficient budgets to adequately perform its tasks and responsibilities;

- The supervisory agencies are subject to strong inter-agency coordination mechanisms (see below); and

- The MoF ensures policy coordination while respecting the autonomy of each agency in its respective field of competencies.

B. Institutional Framework for Macro-prudential Oversight

104. **In the assessed countries, the design of institutional arrangements for macro-prudential oversight is still a work in progress.** Conceptually, such arrangements should include a clear delineation of responsibilities for macro-prudential surveillance, decision making, and enforcement.[38] The FSAPs suggest that, in the assessed countries, the central bank is best placed to perform the surveillance function.[39] Similarly, most countries of the countries under review seem to converge towards an approach where the micro-prudential supervisor is charged with most of the enforcement of macro-prudential rules, although the financial consumer protection agency might also play a role. However, the allocation of macro-prudential decision-making powers varies from country to country. In some countries, the political authorities seem hesitant to entrust autonomous agencies with decision-making powers that go beyond their original mandate. This is particularly so in the context of loan-to-value (LTV) ratios for home mortgages, where micro-prudential and consumer protection concerns intersect with housing policies and taxation. (See Box 1).

105. **Given the involvement of multiple stakeholders, effective macro-prudential oversight requires close and continuous cooperation.** An important precondition of such cooperation relates to the possibility of timely information-sharing between micro- and macro-prudential authorities, which is in some cases hampered by confidentiality obligations. Interestingly, most of the assessed countries seem to be little attracted by the idea of addressing the need to close and continuous cooperation between all stakeholders involved

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[37] Parliamentary committees can play a role in overseeing the effective exercise of powers delegated to the agencies. However, all of the assessed countries have parliamentary systems wherein the Minister of Finance is politically responsible for the agencies before parliament, and the accountability arrangement should reflect this central role of the minister.

[38] Work is in train on MCM and LEG papers on this topic.

[39] In the United States the Dodd-Frank Act (see Section 153 *et.seq*.) established the Office of Financial Research in the Treasury Department and charged this Office with supporting the Financial Stability Oversight Council including through the collection of data and the design of tools for risk monitoring.

via the establishment of a (U.S.-inspired) "Council"-type of structure, wherein the MoF and the various agencies coordinate policies under the political leadership of the minister of finance; in most cases, countries seem to prefer a Memorandum of Understanding- (MoU) based approach.

Box 1. Who Should Set LTV Ratios?

Prudential regulation, with its focus on individual firms, may not be sufficient to prevent system risks caused by the failures of individual financial institutions. Progress is being made to enhance macro-prudential framework by expanding the macro-prudential tool box, although more work needs to be done in clarifying the key concepts and developing the institutional framework for macro prudential supervision.

One related question that emerged from the FSAP discussions in Netherlands and Sweden is who should set (LTV ratios. The housing sector played a critical role in recent financial crises and empirical studies tentatively support the effectiveness of using LTV ratios in taming housing booms. The agency in charge of setting LTV ratios varies from the supervisor responsible for consumer protection (Sweden) to the MoF (Netherlands). Another possibility would be the central bank.

- In the Netherlands, the high LTV ratio of household mortgage loans (well above 100 percent and still rising until recently) is seen as a key vulnerability, which led the MoF, w to propose capping them. They are now at a maximum of 110 percent. The staff recommended assigning additional powers to the supervisors (DNB and the Authority for Financial Markets (AFM)) to facilitate timely actions, specifically by allowing them to modify LTV ratios within a range that could be set by the MoF.

- In Sweden, the Finansinspektionen, which is in charge of both prudential and conduct-of-business supervision, imposed an 85 percent maximum LTV cap in October 2010—combined with a 125 basis points hike of the policy rate by the Swedish central bank—in response to rapidly rising house prices, which has apparently helped slow down mortgage lending in recent months.

106. **This discussion raises the question whether, and how, the financial stability mandate of central banks should be strengthened.** Before the crisis, policy makers broadly agreed that price stability should be the main objective of central banks, and the overall mandate of central banks was geared toward pursuing that objective. After the crisis, policy makers have been debating whether central banks should receive a more explicit and stronger financial stability mandate and, if so, how such mandate should be crafted. The FSAPs found that designing adequate financial stability mandates is not a clear-cut exercise. For instance, in the Netherlands, the central bank already had a financial stability mandate before the crisis, but that mandate was arguably too limited, because it included a financial stability objective that was tied exclusively to the micro-prudential function of the central bank and not to its activities more broadly. Going forward, if policy makers aim at strengthening the financial stability mandate of central banks, care should be given to define and elaborate a cohesive set of objectives, functions and instruments, that would be closely tied with the central bank's other statutory tasks (e.g., monetary stability, micro-prudential supervision).

C. Institutional Models for Micro-Prudential Supervision

107. **The FSAPs suggest that there is no perfect institutional model for micro-prudential supervision: each model can work, or fail.** The assessments detected, however, a trend to move micro-prudential supervision from a "stand alone" regulatory agency to either vest these responsibilities in the central bank (Netherlands and United Kingdom) or strengthen the interactions between the macro prudential (typically the central bank) and the micro prudential supervisor (Germany). As discussed in Box 2, the arguments for charging the central bank with micro-prudential supervision are compelling, but there is no guarantee that reliance upon such a model will be successful. A strong supervisory culture (with minimal regulatory capture) and the avoidance of intra-central bank "silo" mentalities are instrumental in making the model work.

108. **The challenges for micro-prudential supervision do not lie only in the institutional model, but also relate to other elements.** In many assessed countries, in addition to a more forceful supervision (as discussed in Section III), the mandates of micro-prudential supervisors leave room for improvement. In addition to the supervisory autonomy, which will be separately discussed below, the most pressing issues calling for discussion are the following:

- ***Mandates***—Prior to the crisis, prudential supervision tended too often to promote the competiveness of national financial systems (including by supporting "national champions") either formally or simply in practice. The financial crisis has emphasized the need to shift toward protecting the safety and soundness of the financial systems, rather than the competiveness of individual institutions. (Also, the impact of regulation should be analyzed in light of the former rather than the latter.) Particularly in the EU context, such an approach is also inconsistent with the objectives of the single market.

- ***Regulatory Powers***—Another important lesson from the FSAPs (see. e.g., Netherlands) is that the regulatory instruments of supervisors may be limited and in need of strengthening.. In this regard, the distinction between enforcement powers and rule-making authority comes into play. The FSAPs have revealed that often political authorities (such as the Minister), rather than the supervisors, may be vested with rule-making powers. This is explained by democratic legitimacy and the ministerial accountability toward the Parliament (e.g., Netherlands). The challenge is to combine such approach to rule-making with the operational autonomy of the agencies. One avenue could be to involve supervisory agencies in the exercise of Ministerial regulatory powers by way of a transparent and open consultation procedure with a view to balance political, policy and technical arguments.

Box 2. The "Twin Peaks" Model of Supervision

The "twin peaks" model refers to a supervisory framework that separate the prudential and conduct-of-business supervision under different agencies. This model of supervision was adopted in the **Netherlands** in 2002, under which the Dutch Central Bank (DNB) became a single prudential supervisor for all financial institutions (banks, insurance companies, investment firms, pension funds, and securities firms), and the Authority for Financial Markets (AFM) was created as supervisor responsible for conduct-of-business supervision including supervision of security market activities, with a strong focus on market behavior and consumer/investor protection. The "twin peaks" model has been or is being adapted by several Euro area countries, including the United Kingdom (Table 1). Specifically, in the aftermath of recent financial crisis, the U.K. government has announced that the existing unified supervisory regime ("one peak " model) will be replaced by a "twin peak" model, under which a new prudential regulator, the Prudential Regulation Authority (PRA), will be created, as a subsidiary of the Bank of England, to carry out prudential supervision of financial firms; and a new Financial Conduct Authority (FCA) will be set up for the conduct-of-business supervision.

The preference for a unified prudential supervisor has been driven by changes in the financial industry structure. More specifically, financial systems had become dominated by a few very large financial conglomerates operating across bank/insurance/pension lines, and offering increasingly complex financial products that blurred the conventional credit/insurance/securities boundaries.

The preference for objective-based supervision has led to the separation of prudential and conduct-of-business supervision under different agencies, or "twin peaks." The preference seems to be based on the view that the objective of prudential supervision is to safeguard financial stability, while the objective of conduct-of-business supervision is to protect consumers. Despite synergies between them, they require different skill sets and different tools to achieve their individual objective. That said, problems in conduct-of-business are often precursors of prudential difficulties, so focus on appropriate conduct-of-business practices should assist financial stability.

The decision to locate the unified prudential supervisor within the central bank has been based on several factors. These include (i) the close link between macroeconomic stability and financial stability; (ii) the expectation that prudential supervisors could benefit from the central bank's macroeconomic analysis, as well as from the central bank's long standing credibility; and (iii) for the Netherlands, the intention to enhance DNB's role with new responsibilities at the time when monetary policies became the responsibility of the European Central bank (ECB), which would also limit the potential conflict of interest between monetary policy and financial stability objectives.

The crisis demonstrated that the effectiveness of supervision goes beyond which institutional model it is based on. Both the United Kingdom's "one peak" and the Dutch "twin peaks" model were seriously tested during the recent financial crisis. A strong supervisory culture and close coordination between the agencies will be needed to make any model work. .

Table 1. Selected Supervisory Models[40]

	Before Recent Crisis	After Recent Crisis
Integrated prudential and conduct-of-business supervision (One Peak)	Belgium, Italy, France, Germany, Sweden, Switzerland, United Kingdom, Hungary, Poland, Portugal, Japan, Korea, Singapore, Colombia, Nicaragua	Germany, Switzerland, Sweden, Hungary, Poland, Japan, Korea, Singapore, Colombia, Nicaragua
Separated prudential and conduct-of-business supervision (Twin-Peaks)	Australia, Netherlands	Belgium, France, Italy (planned), Portugal (planned), Spain (planned), United Kingdom, Australia, Netherlands
Unified prudential supervision integrated with central bank	Netherlands, Hong Kong, Singapore, Switzerland	Belgium, France, Italy (planned), Spain (planned), United Kingdom, Netherlands, Hong Kong, Singapore, Switzerland
Unified prudential supervision outside central bank	Australia, Belgium, United Kingdom, Japan, Hungary, Germany, Sweden	Australia, Japan, Hungary, Germany, Sweden

109. **Above all, there is a need to improve the effectiveness of supervisory agencies.** A theme common to all the FSAPs in the study is the significant reliance in the past on moral suasion and the increasing focus now being put on intrusive supervision. While the supervisory culture in Europe is typically less "enforcement driven" than in, for example, the United States, supervisory agencies should acknowledge that while moral suasion and informal pressure may, under normal circumstances, be sufficient to influence supervisory institutions' senior management, they also need to stand ready to demand progressively stronger remedial action. This will typically require a decisive "will to act," supported by effective decision-making procedures that do not suffer from stakeholder interference and a legal framework that is not susceptible to arbitrary suspension of supervisory sanctions and decisions.

[40] Based on (1) ECB, 2010, "Recent Developments in Supervisory Structures in the EU Member States (2007-10); (2) Donato Mascinadaro and Marc Quintyn, 2010 "Regulating the Regulators: The Changing Face of Financial Supervision Architectures Before and After the Crisis," and (3) a review by MCM experts.

III. Issues Related to Micro-Prudential Supervision

A. Data Reporting Requirements

110. **In all instances, the granularity of the information obtained via formal regulatory reporting was assessed as insufficient**. The reporting requirements often respect the minimum harmonization dictated under the Capital Requirements Directive. The financial crisis has emphasized the need for rich data being readily available for supervisory agencies, for instance on nonperforming assets or sectoral and geographical concentrations.[41]

111. **Because of the paucity of data collected through normal central reporting to the agencies, the relevant authorities tend to rely on ad hoc arrangements that are based on financial institutions' own internal systems**. In Sweden, Germany and the United Kingdom, there has been a strong reliance on individual bank management information for the systemic banks. For the purposes of off-site supervision, DNB also makes substantial use of banks' internal management reports.

112. **Given the differences that exist between the banks' internal management reporting systems, inconsistencies exist in the manner in which the data is collected and reported.** This has implications for the building of supervisory tools such as Early Warning Systems (EWS) and stress tests, as it makes it difficult to conduct comparative or aggregate analysis. The FSAPs clearly demonstrated a need to enhance existing regulatory reporting frameworks and implement more standardized, comprehensive approaches that ensure timely reporting or all material risks and developments on a sufficiently granular basis. However, they also highlighted that domestic authorities are already undertaking initiatives aimed at overhauling existing frameworks (e.g., Germany).

B. Cross Border Supervision

113. **The guiding principle of the EU's existing framework for cross-border supervision of the banking system is that of home country control.** The responsibility for prudential supervision of a banking group as a whole lies with the "consolidated supervisor," in the country where the group has its head office ("home country"). The consolidated supervisor is required to coordinate and disseminate all relevant or essential information in going concern and emergency situations.

114. **Home country control is also the prudential basis for the "single passport" system, which grants EU-wide freedom of establishment and operation to any bank**

[41] This paper does not discuss Pillar 3 issues as it looks only at issues covered in the FSAP discussions.

licensed in any Member State.[42] When a bank that has received a license operates a branch in another Member State, prudential responsibility, authority, and accountability for the branch are all vested in the home country authorities, for all elements of the prudential framework with the sole exception of liquidity.

115. **The single passport system raises several concerns:**

- **As a consequence of the "single passport," host supervisors cannot prevent the establishment of a branch of an EU institution in their country**, as the Capital Requirements Directive (CRD) does not provide them with the authority to make an independent assessment of the incoming institution's plans. Instead, host supervisors are wholly reliant on the assessment by the home supervisor of the "adequacy of the administrative structure or the financial situation of the credit institution, taking into account the activities envisaged." The CRD does not, in other words, provide host supervisors with formal powers to review and/or challenge the substantive assessment to be conducted by the home supervisors.[43]

- **Moreover, host supervisors have limited supervisory powers vis-à-vis branches, hampering their ability to take appropriate measures under deteriorating circumstances**.[44] Under the CRD, the host supervisor is solely responsible for liquidity supervision and for the implementation of monetary policies in the context of the Euro system (as well as the prevention of financial crime and consumer protection). In contrast, responsibility for supervising the financial soundness and solvency of a credit institution as a whole (including all of its foreign activities) resides with the home supervisor.[45] This limited role for host supervisors has

[42] The EU provisions on the single passport relate to EU Member States, plus the countries that are a member of the EEA, i.e., Norway, Iceland, and Liechtenstein. For simplicity's sake, the analysis focuses on the EU Member States, but would in principle also apply to afore-mentioned EEA countries.

[43] Although the Guidelines for Passport Notifications, issued by CEBS on 27 August 2009 (http://www.eba.europa.eu/getdoc/364b9c1a-c8c4-4e84-8b20-1195707c08f9/CEBS-Passporting-Guidelines.aspx) stress that there should be co-operation between the relevant Authorities, leading to "genuine dialogue" and that Authorities should "provide each other with the fullest mutual assistance" in any matters falling within the scope of this Guideline, it does not obligate home state supervisors to provide host state supervisors with any substantive argumentation evidencing their approval of the envisaged branch establishment. However, the CRD provides for a general cooperation requirement among supervisor with respect to branches, including on information sharing.

[44] As also highlighted in the developments with regard to Icesave, as discussed in Box 3.

[45] The CRD explicitly states that host state supervisors (Article 16) "may not require authorization or endowment capital for branches of credit institutions authorities in other Member States" and (Article 23)" "shall provide that the activities listed in Annex 1 [of the CRD] may be carried out within their territories (…) either by the establishment of a branch of by way of the provision of services, by any credit institution

(continued)

important implications for countries whose banking systems have a large foreign presence—for example, Luxembourg—as their supervisors are heavily dependent on supervision conducted by the home countries.[46] The developments with regard to Icesave during the course of 2008 provide ample illustration of the need for changes in this area (Netherlands).

- **In several instances, host supervisors have not strictly enforced the limited supervisory powers they have.** Host supervisors[47] have granted "concessions"[48] to cross border banking groups located within the EU, lifting solo liquidity requirements. Moreover, host supervisors have placed undue reliance upon home supervisors in ways that have compromised their ability to take effective and timely (if necessary, preemptive) action vis-à-vis branches.

116. **The importance of branches in some EU countries has emphasized the need for closer cooperation between the host and the home country supervisor.** Moreover, operational differences between subsidiaries and branches are waning (Luxembourg), as increasingly important functions of banks such as liquidity and risk management as well as technical systems are centralized at the group level, which makes it hard to disentangle assets and liabilities of the various entities, also characterized by a high level of intra-group exposure.

117. **While EU directives[49] impose mandatory rules for cooperation, coordination, and information exchange for supervisory purposes, the FSAPs have highlighted problems in this regard. In some instances,** information sharing was inadequate (United Kingdom), and in others the supervisor appears to have relied to a large extent on the supervision exercised by the host supervisor (Netherlands).

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authorized and supervised by the competent authorities of another Member State, provides that such activities are covered by the authorization."

[46] For instance, in the event of breaches of domestic legislation, host authorities can only intervene by asking the home supervisor to take measures aimed at correcting the irregular situation.

[47] Three supervisory authorities (Germany, Netherlands and United Kingdom) have granted liquidity concessions to third country branches.

[48] Liquidity concessions were used to hand off responsibilities to the home supervisors (Germany, United Kingdom, the Netherlands as well as two other EU countries). They imply waiving quantitative requirements with respect to liquidity, in return home supervisors assume certain reporting obligations to the host supervisor. This "cooperation" involved the home supervisory authority carrying out liquidity supervision on a centralized basis for the whole group, including branches in other EU Member States.

[49] CRD, Articles 129 and 132.

118. **Recent enhancements to the EU legislative framework on the home-host cooperation are a positive step forward in helping to address issues identified in the FSAPs.** The European Union has enhanced supervisory co-operation through mandatory Colleges of Supervisors. Since the CRD II amendment,[50] branches can be designated as 'significant', mandating the establishment of a College of Supervisors—if such a forum does not already exist—in which the relevant host state supervisor of such a branch will participate.Through such a College, the supervisory authorities will, *inter alia*, exchange information, determine supervisory programs on the basis of a risk assessment and trying to come to joint decisions on Pillar 2 additional capital. The establishment of Colleges of Supervisors has enhanced the effectiveness of cross-border supervision in several ways. The Colleges meet (at least) twice per year and provide a useful forum to coordinate supervisory activities and exchange information; moreover, the Colleges are beginning to serve as a forum for joint decision-making.[51]

119. **At the same time, the operational framework for the Colleges could be strengthened.** While the legal framework for information sharing within the supervisory perimeter within the EU is well established, the exchange of information can be sluggish in practice. The CRD explicitly permits and, in some cases, requires information sharing for specified purposes between the supervisory authorities of Member States, even if memoranda of understanding are not in place.[52] In practice, however, College participants do not share information proactively and have been slow to reach agreements on the sharing of information for particular purposes. Moreover, the CRD, as amended, allows the participation of third countries' supervisory authorities in Colleges of supervisors, but only if they are subject to confidentiality requirements that are equivalent to the relevant CRD requirements. In practice, some key third countries are still missing at EU Colleges.

120. **The effectiveness of the colleges of supervisors would be substantially enhanced through the implementation of several key measures.** These include greater emphasis on peer reviews, and on onsite as well as offsite supervision. According to the Peer Review on the Functioning of Supervisory Colleges, conducted by CEBS in 2010,[53] important next steps

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[50] Directive 2009/111/EC, published on 16 September 2009. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:302:0097:0119:EN:PDF.

[51] This is the case even though full implementation of EBA's Guidelines for the joint assessment and joint decision regarding the capital adequacy of cross-border groups[51] is only expected as of the end of March 2011.

[52] Certain concerns are persisting as to possible impediments which may prevent a national authority to provide firm-specific information that is not relevant for direct supervisory purposes, but for other goals such as systemic risk assessment.

[53] http://www.eba.europa.eu/documents/Review-Panel/Peer-Review-Report-on-the-functioning-of-colleges.aspx, issued on October 18, 2010. For details, see Table 2.

Table 2. Main Observations of EBA's Supervisory Colleges Peer Review 2010

Information exchange	
Practical modalities of information exchange	Information exchange should be a continuous process, supplementing current bilateral contacts
Scope of information exchange	Colleges have often not reached agreement on the type of information that is deemed to be *essential* (and thus must be shared pro-actively) and is *relevan*t (i.e., is available upon request)
Means of information exchange	Information exchange would benefit from secure web platforms and quarterly reports
Risk assessment	
Risk assessment process	Not every College has instituted a "structured, two-way risk assessment process;" moreover, risk assessments would benefit from discussions with the group's top management and the development of common 'scoring scales'
Risk expert groups	Risk expert groups consisting of experts from all College members can provide useful input to the risk assessment process
Planning and coordination	
Common supervisory planning	Much progress needs to be achieved to better synchronize supervisory plans
Joint inspections	Joint inspections are deemed to be advantageous but have not yet been taken up by every College
Findings of inspections and follow-up	Findings of inspections and decisions on appropriate follow-up should be clearly communicated to other College members

to strengthen the role of the Colleges will be (i) to extend and deepen cross-border cooperation, *inter alia* through more joint activities, (ii) to extend the perimeter of the Colleges by expanding the membership toward (additional) non-EU countries; and (iii) to establish efficient and secure channels for information sharing, ensuring a swift information delivery on a 'real time' basis.

IV. Issues Related to Crisis Management and Bank Resolution

A. Recognizing the Role of the Ministry of Finance

121. **The FSAPs point to the need to explicitly recognize and support the central role of the MoF in crisis management frameworks.** In particular, three areas could be improved.

- ***Flow of Information from Agencies to the MoF***—While MoFs should not ordinarily have access to confidential supervisory information concerning individual financial

Box 3. Icesave

From the perspective of home-host cooperation within Europe, the Icesave case is interesting for two reasons. First of all, it highlights the importance of effective cooperation and information-sharing. Secondly, the case highlights the importance of full and timely information-sharing between relevant authorities, as this would typically be a prerequisite for effective intervention at an early stage, thus preventing the occurrence of bigger and more costly problems at a later stage. Icesave was an online savings account brand owned and operated by Landsbanki from 2006–2008. It operated in two countries - the United Kingdom (since October 2006) and the Netherlands (since May 2008).

Landsbanki was placed into receivership by the Icelandic Financial Supervisory Authority (FME) on October 7, 2008, following numerous comments in the international media on weaknesses in the Icelandic banking system and a subsequent deposit run in its U.K. operations. At the time, a press release from the FME stated that all of Landsbanki's Icelandic branches, call centers, ATMs and internet operations would be open for business as usual, and that all "domestic deposits" were fully guaranteed; the press release did not refer to deposits abroad. Shortly after issuance of the press release, on October 9, 2008, the Icelandic assets and liabilities of Landsbanki were transferred to a new government-owned bank, Nýi Landsbanki. As Landsbanki had been acquiring assets in Iceland with foreign loans and deposits, the assets of Nýi Landsbanki exceeded its liabilities significantly, even after it had made provisions for over half its loans to customers. .

It was immediately after Landsbanki has been placed into receivership by FME that both the U.K. and the Dutch authorities attempted to ring-fence assets and using their deposit insurance schemes to compensate depositors up to the insured maximum. In this context, both countries took it upon themselves to compensate their depositors and subsequently tried to recoup the paid-out amounts from Iceland. Iceland has disputed that it has a sovereign obligation to repay the United Kingdom and Dutch governments. Since then the three governments have spent over two years trying to reach an agreement on the Icesave deposit payouts. To date, the governments involved have not reached agreement on the way forward, with the population of Iceland voting against two consecutive repayment schemes via two referenda. The Netherlands and the United Kingdom instituted legal proceedings against Iceland at the Court of Justice of the European Free Trade Association States. The Court has not taken any decision against Iceland, although the ESA issued a reasoned opinion in June, finding that Iceland has breached the EU directive on deposit insurance.

institutions in normal times, the MoF does need access to such information when there is a crisis (e.g., to inform adequate decision making including with regard to solvency support), albeit under appropriate safeguards. At present, legal frameworks within the EU (including EU directives) do not sufficiently make provision for such information sharing. The FSAPs, therefore, recommended that confidentiality rules be modified accordingly.[54]

[54] Once the legislation has been modified to allow better information flows from the specialized agencies to the MoF, a MoU between them could further specify the type and timing of information sharing.

- ***Budgetary Frameworks for Official Support***—MoFs should have the legal authority to enter swiftly into support transactions with financial institutions (recapitalization, acquisition of shares, extension of guarantees) and execute those through the transfer of financial resources. The FSAPs have demonstrated that sufficient provision is made for the former but not the latter. More specifically, authorities have been forced to enter into support transactions without necessarily having budgetary authorization to fund those transactions. Staff has therefore recommended that MoFs benefit from a standing budgetary authorization to provide official support, albeit with safeguards (such as adequate resolution frameworks) to mitigate moral hazard.

- ***Role of MoF in Bank Resolution***—Given that the effective resolution of ailing banks is likely to require temporary official financing,[55] the decision-making process of resolution agencies should provide for adequate coordination with the MoF. In particular with regard to the resolution of large or systemically important financial institutions, the MoF is likely to be involved in the design of resolution and crisis containment strategies. Legal frameworks should recognize this reality explicitly, and establish a clear and effective division of labor between the MoF, the central bank, and the resolution authorities, subject to appropriate confidentially arrangements. (Netherlands, Sweden and United Kingdom).

B. Emergency Liquidity Assistance

122. **The principles underlying the provision of emergency liquidity assistance (ELA) to banks are well-established.** [56] Such assistance should only be provided to banks that are illiquid but not insolvent. Moreover, such lending should be provided against high-quality collateral although, in a crisis, this requirement can be relaxed, and a central bank can accept any asset of the bank in question, in principle with a haircut to ensure that it is not at financial risk. In addition, such lending is not traditionally reported to the public at the time, on the assumption that such reporting would undermine the standing of the bank.

123. **In the recent financial crisis, European central banks made extensive use of emergency liquidity assistance.** On 2 October 2008, the European Union announced that guarantees from the German government, consistent with EC principles on state aid, enabled Hypo Real Estate Holding AG to "tap additional emergency liquidity lines" from the Bundesbank. As another example, RBS and HBOS received more than GBP 60 billion in

[55] On the role of temporary public financing in orderly resolution see IMF: Resolution of Cross Border bank—A Proposed Framework for Enhanced Coordination, June 2010, pp 23–25.

[56] See Bagehot (1872). ELA is sometimes also referred to Lender of Last Resort (LOLR) funding.

emergency loans in the autumn of 2008, repaying the last of these loans in January 2009.[57] More recently, reports from the Central Bank of Ireland indicate substantial emergency liquidity is being provided to Irish banks.

124. **In the Euro-Area, under current arrangements, ELA is provided by, and at the risk of, the National Central Banks (NCBs), and not by the ECB.** In the Euro Area, the NCBs provide monetary policy credits to their local banks pursuant to a policy and legal framework established by the (Governing Council of the) ECB. Even though the NCBs are legally the counterparty of the borrowing banks, the risks and revenues from those credits are pooled within the Eurosystem. The framework for ELA is fundamentally different: such assistance is provided by individual NCBs and the risks are not pooled within the Eurosystem. (Losses thus accrue to the NCB and ultimately the Member State's Treasury.) NCBs are required to inform the ECB of such operations. In cases involving large amounts of support above an agreed threshold, the NCB involved has to seek the approval of the ECB, in order to avoid interfering with the single monetary policy.

125. **While the FSAPs found the relevant countries' frameworks for ELA to be adequate, they also revealed that the crucial distinction between ECB monetary policy credit and NCB emergency liquidity assistance is not always well understood by market participants.** This became evident when NCBs (as part of the ESCB) occasionally closed out local banks from access to monetary policy operations and shifted them toward ELA. In such cases, market participants did not understand that, given the greater risks associated with ELA, the haircuts imposed on collateral in this context are generally much higher than they are for monetary policy credits.

C. Bank Resolution

126. **It is generally recognized that a sound bank resolution regime is a key component of a country's crisis management framework.** Without such a regime in place, policy-makers will be faced with the difficult choice between letting a financial institution fail with a potential risk to financial stability or bailing out the institution with taxpayer money and serious moral hazard consequences. Many countries have therefore enacted special insolvency frameworks that apply to banks and that differ in several important respects from the general corporate insolvency regime. These frameworks typically give the banking authorities the central role in the conduct of insolvency proceedings and often minimize the involvement of the courts. In addition, sound bank resolution frameworks

[57] See the Bank of England's submission to the Treasury Committee, dated 24 November 2009. http://www.bankofengland.co.uk/publications/other/treasurycommittee/financialstability/ela091124.pdf

typically include mechanisms to resolve banks under official control as a going concern ("official administration") as well as liquidation mechanisms that strike a balance between financial stability, the protection of depositors, and creditor rights.[58] Special resolution tools (such as "purchase and assumption" transactions and, increasingly, mandatory debt restructuring) that can be triggered both before and after actual insolvency constitute key components of the regime.

Official administration

127. **The assessed countries' regimes for going concern resolution under official control ("official administration") vary considerably.** Some countries (such as the United Kingdom) have no such framework in place, and rely on mechanisms to resolve an ailing bank while it is under private control. Other countries (such as the Netherlands and Luxembourg) have a form of official administration, albeit with some design features that may impede effective bank resolution. Typical weaknesses include (i) a lack of robust bank resolution tools such as a mechanism for the authorities to transfers of assets and liabilities of the failing institution without the consent of the counterparties, and (ii) a requirement that a full moratorium over bank liabilities be *automatically* imposed upon the initiation of official administration even where it may hinder the resolution of the bank as a going concern.

Resolution tools

128. **In response to the crisis, progress has been made at the national level to introduce more effective resolution tools.** The recent global financial crisis has exposed inadequacies in national bank insolvency frameworks, specifically with regard to the resolution of systemic financial institutions. More specifically, under highly volatile and uncertain market conditions, lengthy and uncertain court proceedings to wind-down a distressed bank—mainly owing to the complexity and cross-border nature of a distressed institution—could undermine market confidence and risk destabilizing the financial system. The assessed countries have addressed such inadequacies in particular by introducing the following elements in their frameworks:[59]

- ***Early Triggers***- Several countries have introduced new triggers for the commencement of insolvency proceedings that allow their authorities to intervene at an earlier stage of the bank's difficulties. While the Dutch framework already

[58] On the concept of "official administration" see IMF/World Bank, "An Overview of the Legal, Institutional, and Regulatory Framework for Bank Insolvency," 2009, pp 26–35, and IMF, "Resolution of Cross Border Banks—A Proposed Framework for Enhanced Coordination," June 2010, para 35.

[59] As discussed in the EFFE companion paper, the EC is also preparing an EU-wide Directive with the aim to harmonize resolution tools.

included early triggers before the crisis, Germany and the United Kingdom have recently introduced legislation allowing the resolution authorities to intervene in banks before actual insolvency. In Luxembourg and Sweden, bank insolvency frameworks do not establish triggers for early intervention and this issue remains to be addressed.

- ***Purchase and Assumption Transactions***—Germany and the United Kingdom have recently introduced legislation for purchase and assumption (P&A) transactions. Under these mechanisms, the authorities are empowered to restructure ailing banks by transferring assets and liabilities to another institution without the consent of the relevant counterparties, thus preserving their going-concern value. The Netherlands already had a framework for P&As while Luxembourg and Sweden still have no such framework.

- ***Bridge Banks***—Post crisis, Germany and the United Kingdom have enacted rules underpinning the use of "bridge banks" under which the viable parts of a troubled bank's business is spun off to a publicly-held bridge institution on a temporary basis, pending transfer to a private sector purchaser. The Netherlands is considering legislation in the same direction. Luxembourg and Sweden have no framework for bridge banks.

- ***Mandatory Debt Restructuring***—Germany is the only of the assessed countries which has already enacted a bank-specific framework for mandatory debt restructuring of banks – that is, under which the authorities may unilaterally restructure the balance sheet of a troubled bank without the consent of the counterparties.

Administrative versus judicial resolution procedures

129. **The FSAPs present compelling arguments for strengthening the balance between judicial review and the effectiveness of resolution procedures.** In many assessed countries (Germany, Netherlands, and Sweden), the judiciary plays a prominent role in bank resolution. While this is understandable in light of the legal traditions of those countries, there is a tension between the protection of stakeholder interests through judicial involvement and the need for speed of those resolution proceedings. To achieve a better balance between the various public policy objectives, the FSAPs have recommended strengthening the administrative nature of bank resolution proceedings by shifting decision-making power to bank resolution agencies wherever possible, while enhancing the ex post review powers of the judiciary so as to ensure that stakeholder rights are protected and that the resolution authorities act consistently with the legal framework.

D. Institutional Set-Up of Deposit Guarantee Schemes (DGSs)

130. **Another lesson from the FSAPs is that their governance structures may undermine the ability of DGSs to contribute to resolution**. The EU's harmonization of national DGSs (see below) does not address their governance, and as a consequence, the governance frameworks of DGSs in EU Member States continue to differ significantly.

- In the Netherlands and the United Kingdom, the DGS does not have separate legal personality and is directly managed and operated by respectively the central bank and micro-prudential supervisor. Such a structure favors the sharing of confidential information regarding weak banks and strong coordination between resolution and deposit insurance.

- In Germany and Luxembourg, the DGS is managed by the contributing banks and accountable to its members but not to the public authorities. Private ownership of the DGS raises conflict of interest issues and can hinder the sharing of confidential information and coordination in resolution.

131. **The DGSs in many of the assessed countries are not well-equipped to support effective bank resolution**. While deposit insurance is organized at member state level, the European Union has issued a directive to harmonize to some extent the rules underpinning the national DGSs.. However, this directive follows the strict "pay-box" approach that has been implemented by a number of Member States and that suffers from a number of weaknesses:

- ***No Authorization to Finance Bank Resolution-*** As "pay box" systems, several of the assessed DGSs do not have the power to provide financing in support of a resolution of a troubled bank. They are either inadequately pre-funded or unavailable to finance the resolution of banks, for example, through "purchase and assumption" transactions.[60] Those DGSs typically also lack regulatory obligations regarding the availability of information on insured depositors, operational manuals, contractual frameworks and due diligence tools to prepare and perfect the necessary transfers within a rapid timeframe, and are prohibited from establishing "bridge banks" structures.

- ***Lack of Depositor Preference—***Several DGSs do not have a system of deposit preference in place. Consequently, the DGS ranks as an unsecured creditor of the

[60] To avoid moral hazard, such power should be well circumscribed: the DGS should only provide financial support up to the amount of insured deposits, and under the condition that the transferor bank is subsequently put into liquidation (thus avoiding open bank assistance inappropriately benefitting to the pre-insolvency stakeholders).

insolvent estate. Depositor preference would strengthen the ability of the DGS to recover its claim by preference over the ordinary unsecured creditors, thus reducing potential costs to the taxpayer.

E. Inter-Agency Coordination for Crisis Management and Bank Resolution

132. **Another finding of the FSAPs is that, while inter-agency MoUs may be useful in the context of crisis management, their effectiveness in facilitating a quick crisis response varied among countries.** All of the assessed countries have domestic interagency MoUs, which in several instances contributed to an appropriate policy response. For instance, in the Netherlands, the actions of the authorities have been buttressed by a well-designed MoU between the MoF and the central bank that provides guidance on how the central bank will provide emergency liquidity assistance. In some countries, the FSAPs have identified a need to expand the coverage of MoUs, in particular where the supervisory and resolution authorities are separate agencies (such as Germany); an additional concern arises as to the coordination between those two agencies in resolving banks. This being said, the U.K. experience has illustrated the inherent limitations of MoUs: while the Tripartite MoU was relatively well designed in function of the respective responsibilities of the relevant agencies (including MoF), the crisis response was hampered by inter-agency coordination problems.

133. **The limitations of MoUs should ideally be addressed by legislative reforms.** In addition to fine-tuning the individual mandates of the respective agencies, there is room for enshrining explicit legal coordination duties and mechanisms in legislation (as is, for instance, the case in Luxembourg). One type of crisis management coordination mechanism could consist of a multiparty inter-agency committee in which MoF and various agencies are represented. The design of such a committee should be well aligned with the institutional arrangements for macro-prudential oversight. While there are some similarities between the two, there are also significant differences. For instance, the deposit insurance fund might not necessarily be involved in macro-prudential oversight, but should be a key member of crisis management committees.

F. Cross-Border Resolution

134. **In addition to progressing with international and EU reforms, the FSAPs suggested that steps should be taken at the national levels to reinforce coordination between national authorities and foreign authorities regarding cross-border bank resolution**. Resolution within the EU is dealt with by EU directives, which are broadly appropriate, albeit with some room for improvement (mainly regarding intra-group coordination). In contrast, with regard to coordination with non-EU Member States, the assessed countries would benefit from taking more forceful action authorizing their resolution authorities to coordinate action with foreign authorities. Such reforms likely will have to be combined with parallel strengthening of cross-border supervisory arrangements,

and are likely to require some minimum harmonization and burden sharing to be fully effective.[61]

V. CONCLUSIONS

135. **The FSAPs indicate a trend that MoFs are likely to have a more prominent role in financial crisis prevention and management that is likely to have an impact on the autonomy of central banks and prudential supervisors.** While increased oversight of autonomous agencies of the State is appropriate, the operational autonomy of these agencies should nevertheless be safeguarded. While there is no simple solution here, the operational autonomy of supervisory agencies is essential and should remain in the forefront of any institutional reform. Moreover, there is a need for strong coordination mechanisms among those agencies as well as between the agencies and the Government.

136. **There is a clear tendency in the assessed countries to strengthen the financial stability mandates of central banks, but those mandates should be carefully designed.** In this context, greater precision should be given to the design of a well integrated set of central bank objectives, functions and instruments. Especially, those central banks that are also micro-prudential supervisors will have to calibrate a delicate balance between their monetary stability and their financial stability mandates.

137. **The FSAPs demonstrated a need to enhance existing regulatory reporting frameworks by implementing more standardized and comprehensive approaches**. The FSAPs reveal weaknesses in the gathering of supervisory information obtained via formal regulatory reporting and too much dependency on the internal reporting systems of financial institutions. Remaining legal impediments that hinder an efficient exchange of information between the supervisory agencies to fulfill their tasks should be abolished.

138. **The FSAPs indicate that, as a consequence of the EU home country control principle, the limited supervisory powers of host supervisors vis-à-vis branches of foreign banks can cause problems.** Enhancement of home-host cooperation is under way in most jurisdictions, for instance through the colleges of supervisors, but such cooperation can be intensified..

139. **The bank resolution frameworks vary considerably among the assessed countries.** Major weaknesses exist in several countries, especially as their frameworks lack robust resolution tools. Adequate coordination mechanisms with MoFs should be provided in case temporary official financing is required. Also, coordination mechanisms between courts, resolution authorities and supervisory agencies can be strengthened by increasing reliance on

[61] See IMF, "Resolution of Cross Border Banks—A Proposed Framework for Enhanced Coordination," June 2010.

administrative procedures wherever possible while enhancing the ex-post review powers of the courts. Some other countries have recently introduced law reform measures to overcome the identified weaknesses. With regard to cross-border banks the lack of *ex ante* burden sharing arrangements within the European Union continues to be an impediment.

140. **Many national DGSs still require improvement in a number of important areas.** These include the absence of authorization to finance bank resolution, the lack of *ex ante* funding, and the lack of depositor preference, which, taken all together, may make it cumbersome and time consuming for national DGSs to play an active role in bank resolution and ensure that tax payer expenses are kept as low as possible.

141. **Especially with regard to cross-border financial institutions, some of the weaknesses are beyond control of the assessed countries.** Thus impediments to fully effective cross-border supervision remain, and the resolution of cross-border banks to date has been unsatisfactory. Comprehensive solutions are likely to be reached at the EU-level or beyond.

INTERNATIONAL MONETARY FUND

EURO AREA POLICIES

Selected Issues

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Approved by the European Department

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EXECUTIVE SUMMARY

The selected issues paper accompanying the staff report discusses corporate funding costs (¶7 of the staff report), the effects ECB policy measures on individual euro area banks ((¶18 of the staff report), the interplay between national and supranational macroprudential policy frameworks (¶32 of the staff report), governance issues (Section IV.B and Box 4 of the staff report), and growth drivers (Section IV.C of the staff report).

Sovereign credit costs are closely correlated with private funding costs (Chapter I). Of a 100 basis point increase in sovereign spreads about 50–60 basis points are passed on to private firms on average. To avoid setbacks in economic and financial integration of the euro area, strict fiscal consolidation is needed in countries with high public debt and funding costs. Moreover, the links between sovereigns and firms located in their jurisdiction will need to be loosened. While there is no silver bullet to achieve this in practice, EU support schemes for bank restructuring or resolution, harmonization of regulation and taxation, and a stronger European competition and supervisory authorities should all help.

ECB policy measures significantly affect individual euro area banks' stock prices and profitability as well as systemic risk indicators (Chapter II). The performance of weak banks seems negatively affected by rising interest rates, while both strong and weak banks would benefit from withdrawal of nonstandard measures, with some exceptions. Overall, the results suggest care should be taken not to adversely affect weak banks and banks in the periphery, and strengthening of capital and funding should remain high on the agenda.

Strong financial integration and a high degree of cross-border banking activities in Europe imply that the European Systemic Risk Board (ESRB) needs to play a leading role in the macroprudential oversight for the EU as a whole (Chapter III). Effective macroprudential oversight also requires strong mandates and appropriate tools at the level of national macroprudential authorities. The ESRB should ensure that a common macroprudential toolkit is established EU-wide and play a key role in ensuring reciprocity of macroprudential policies among Member States.

Skeptics stress the fragility of EMU because of the lack of fiscal union, inadequate market flexibility, and low level of labor mobility (Chapter IV). While a fully-fledged federal system would have helped to limit the damage of the crisis and speed up its resolution, this is no proof that the euro area is not viable without a federalist fiscal architecture. Nonetheless, a major overhaul of EMU's governance is needed to find effective solutions to the deficiencies of its institutional setup.

Total factor productivity (TFP) is the main driver underlying the superior GDP growth in the U.S. compared to Europe since the mid-1990s, with the U.S. advantage being concentrated in ICT and market services sectors (Chapter V). TFP performance in these European sectors is hampered by low participation in external trade, strict product market regulation, inadequate human capital and high corporate taxes, all inhibiting knowledge creation and assimilation. Europe therefore needs to seek growth by opening up markets to domestic and foreign competition, enhancing human capital and easing corporate taxation.

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I. Financial Integration and Corporate Funding Costs in Europe after the Financial and Sovereign Debt Crisis[1]

A. Introduction

1. **The global financial crisis and the ensuing sovereign debt crisis in Europe have had a marked impact on financial integration and debt funding costs in Europe.** The blow-out in credit spreads for the sovereign debt of several euro area member states came unexpected and sharply reversed a long period of convergence. Before the financial crisis, the euro area bond market was one of the most integrated financial market segments (ECB, 2009). Following the introduction of the euro, debt funding costs fell sharply for many member states to the much lower German level and differences in government bond yields never exceeded 50 basis points until August 2007. Not only the public sector benefited from the common currency but banks and other firms also saw a marked decline in debt costs. Once corrected for corporate- and sector-specific risk, the geographic location of a firm explained only a very small portion of the variance of corporate bond yields, typically no more than 2 percent (ECB, 2004).

2. **Markets changed course after the onset of the financial crisis and a jump in global risk aversion.** Some sovereigns benefited from a flight to safety, while others and risky corporate debt saw their spreads rise sharply. Initially, the common currency shielded euro area member states from liquidity shortages and sudden stops in debt flows. With augmented access to the ECB and swap lines agreed between the ECB and the U.S. Federal Reserve, banks could receive unlimited euro and dollar liquidity against a broad range of collateral, including of course, euro area government paper. However, when public debt dynamics deteriorated sharply and sustainability concerns arose, membership of a currency union turned into a double-edged sword for some. Lacking control over the currency in which their debt is issued, members with a surge in public debt suddenly appeared fiscally fragile (De Grauwe, 2011). Mody (2009) identifies the rescue of Bear Stearns in March 2008 as the turning point after which euro area countries became increasingly differentiated. Thereafter, sovereign spreads tended to rise when the prospects of the domestic financial sector worsened which was especially evident in Ireland. Following the failure of Lehman Brothers in October 2008, spreads also rose faster for countries with high ratios of public debt-to-GDP (Sgherri and Zoli, 2009), and blew out after the dismal Greek fiscal position was fully revealed.

3. **The surge in credit spreads was not limited to sovereign debt markets.** Pronounced global risk aversion also pushed the spread for riskier corporate debt to record levels. However, this spike was short lived and the pricing of average corporate risk has eased significantly over the past years. In contrast, sovereign spreads for several euro area member states continued to rise in 2010 and are close to their highest levels since introduction of the euro (Figure I.1). These

[1] Prepared by Thomas Harjes

developments were mirrored by private funding costs in those member states as sovereign spreads are often perceived as the benchmark for the pricing of other debt instruments (ECB, 2011).

4. **This note sets out to explore the recent relationship between sovereign and private funding costs in the euro area which have displayed a strong correlation over the past year in several member states.** The link between sovereign spreads and private funding costs is complex and causality can run in both directions. Moreover, both may at times reflect changes in overall economic conditions or a country's outlook causing a spurious relationship between public and private funding costs. Generally, differences in individual euro area sovereign debt spreads reflect default and liquidity risk given the absence of currency risk. The liquidity premium for smaller member states has likely increased somewhat but the sharp differences in the price of public debt for Austria and Finland, on the one hand, and Greece, Ireland and Portugal, on the other hand suggest that perceived default risk accounts for the bulk of these countries' debt spreads. There are several channels through which their high sovereign funding costs may affect private borrowing costs, and vice versa:

- A country with significantly higher sovereign funding costs may have to reduce its deficit sharply and would be expected to take fiscal consolidation measures, possibly including higher corporate taxes (Papademos, 2010). This would lower firms' net profits, worsen their credit risk assessment and drive up their credit risk premia.

- Strict fiscal austerity may have a negative short-term impact on economic growth and weigh on firms' profits as well, driving up credit risk premia.

- In the extreme event of a disorderly sovereign default, a country's foreign debt financing often dries up completely at least for some time and, especially for exporters, effective tax rates can rise sharply as the government seeks to raise revenue in foreign exchange.

- Large systemically important firms including banks are likely to receive some state support if a crisis hits, establishing a direct link from sovereign to private funding costs.

- At the same time, the financial health of private firms may have implications for public funding costs if these firms are considered systemically important for the country's economy, or the European financial system. The Irish case is a prominent example where private banks' default risk spread to its sovereign after debt liabilities were first guaranteed and later transferred to the government.

B. Data and Estimation

5. **The estimation first separates country effects in corporate CDS premia from sector-specific and individual credit risk.** A second step relates these estimated country effects to changes in sovereign CDS premia and a country's economic outlook, measured by the national stock index. Using monthly data comprising CDS for about 200 euro area firms, their credit ratings and industry classification, sovereign CDS and national stock market indexes, the following section presents evidence that there is a positive and significant link between sovereign and private funding costs.

Data description

6. **The sample includes monthly data of CDS for about 200 euro area firms, their credit ratings and industry classification, sovereign CDS and national stock market indexes of 11 euro area countries starting in 2008.**[2] Differences in funding costs are measured by 5-year CDS for senior debt denominated in euro. While CDS premia and funding spreads should theoretically move in parallel, Fontana (2010) and Fontana and Scheicher (2010) show that CDS premia for sovereign and corporate debt have deviated at times from debt spreads, defined as debt yield minus a benchmark rate, since the onset of the financial crisis. But the difference rarely exceeded 100 basis points. Most euro area firms issue debt infrequently and at different maturities. The use of 5-year CDS simplifies the analysis and does not require correcting for differences in term structure across corporate debt. The credit rating is the lower of either Moody's or S&P's rating if available and adjusted over time. Industry classification includes the following sectoral classification: banking, non-bank financials, manufacturing, energy, transport and telecommunications. Figures I.2 and I.3 present CDS premia for a selection of euro area banks and telecoms. Greek, Irish, and Portuguese firms clearly stand out with Spain marking the border between low and high premia. CDS premia for telecoms are markedly lower than the ones for sovereign and bank CDS premia proving that the sovereign does not necessarily set a lower bound for private credit costs.

Estimation of country effects

7. **To explore the link between private and public borrowing costs, the estimation proceeds in two steps.** First is the decomposition of the variation in corporate CDS premia into sector-, credit-, and country-specific effects. Second is the estimation of a relationship between these country-specific factors and sovereign CDS premia. Following broadly the methodology of Baele and others (2004), based on the Heston and Rouwenhorst (1994) approach for equity returns, corporate default spreads are modeled to consist of five components: a common factor

[2] Data source is Datastream, detailed information is provided in the Data Appendix. The countries include Austria, Belgium, Finland, France, Germany, Greece, Italy, Ireland, Netherlands, Portugal, and Spain.

(α), a credit risk factor (β), an industry, or sector-specific factor (γ), a country factor (δ), and a firm-specific disturbance (ε).

$$CDS_{it} = \alpha_t + \beta_{it} + \gamma_{it} + \delta_{it} + \varepsilon_{it} \quad (1)$$

A time series for common, credit, industry and country factors is estimated by running the following cross-sectional regression each month:

$$CDS_i = \alpha + \sum_{j=1}^{J} \beta_j I_{ij}^{Credit} + \sum_{k=1}^{K} \gamma_k I_{ik}^{Industry} + \sum_{l=1}^{L} \delta_i I_l^{Country} + \varepsilon_i \quad (2)$$

where (I) is a dummy variable that is one if the firm with CDS_i has credit rating (j), belongs to industry (k), or country (l). Since each firm belongs to at least one country, credit rating and industry, the estimation can only reveal cross-sectional differences between countries, industries and credit ratings and the following parameter restrictions are imposed:

$$\sum_{j=1}^{J} \beta_j = 0; \sum_{k=1}^{K} \gamma_k = 0; \sum_{i=0}^{I} \delta_i = 0 \quad (3)$$

8. **Credit rating and country effects may not be fully independent.** Sovereign credit worries often lead to across-the-board downgrading of the credit ratings of that country's firms and especially banks. They may even spill over from one member state to others that are perceived to display similar characteristics (see, Arezki and others 2011). Therefore, it is possible that the above equation may feature a bias and likely underestimate country effects to some extent. Figure I.4 presents the evolution of country effects since early 2008.[3] The variation in country effects has risen markedly since early 2008, especially for countries in the periphery: Greece, Ireland and Portugal stand out with Spain being the borderline case. Also, the statistical significance of country effects rises over time. Other than for banks, sector-specific effects are not significant and, as a result, sectoral differentiation is reduced to banks and non-banks with the former, as expected, featuring higher CDS premia. The credit rating factors (3 for investment grade credit and 1 for speculative/non-investment credit) are mostly significant and the factor for speculative credit nicely tracks the credit spread between average 5-year BBB euro corporate yields (IBOXX) and German Bunds.

[3] Country effects are displayed for the final month in each quarter and as differences to the lowest country effect estimated each month rather than as deviations from average.

Estimation of the relationship between sovereign and corporate CDS

9. **Country effects may reflect sovereign worries.** They could also signal changes in a country's economic outlook measured by changes in national stock market indexes, as discussed above, although most firms in the sample (with actively traded CDS) are relatively large and their operations internationally diversified. In a panel regression, the time series of country factors (δ) is regressed on sovereign CDS premia (x) and national stock market indexes (y) with various specifications of fixed/random cross-section and time effects.

$$\delta_{lt} = \alpha + \mu x_{lt} + \sigma y_{lt} + \pi_l + w_t + \varepsilon_{lt} \quad (4)$$

10. **For various specifications (with/without fixed and random cross-section/time effects), estimation of (4) reveals a significant and positive relationship between sovereign CDS premia and the country effects that were estimated in the previous section.** Of a 100-basis point increase in sovereign spreads about 50–60 basis points are passed on to private firms (Table 1), noting that causality may not always work in only one direction. At the same time, the relationship between changes in national stock market indexes and country effects is small and not significant for most specifications. Sovereign CDS premia and national stock market indexes may not be fully independent but regressed on each other do not exhibit any significant relationship over the sample. To learn more about possible causality, correlations and Granger causality is explored at the country level for sovereign CDS premia and country effects. Contemporaneous correlation (no lags) dominates and Granger causality tests are largely inconclusive.

Table I.1. Panel Estimates of the Effects of Sovereign CDS and Stock Price Developments on Country Effects

Variables	(1) Fixed effects Cross-country	(2) Fixed effects Time	(3) Fixed effects Cross-country+Time	(4) Random effects Cross-country	(5) Random effects Time	(6) Random effects Cross-country+Time
Sovereign CDS	0.512***	0.523***	0.581***	0.529***	0.537***	0.537***
	(0.034)	(0.047)	(0.054)	(0.035)	(0.037)	(0.037)
Stock Index (level)	0.000	1.306**	-0.567	-0.244	0.265	-0.266
	(0.002)	(0.601)	(0.916)	(0.325)	(0.353)	(0.362)
Constant	27.630**	125.600**	-19.630	10.691	47.180	8.347
	(19.134)	(48.717)	(72.252)	(29556)	(29.311)	(32.38)
R-squared	0.82	0.72	0.84	0.66	0.69	0.66
Prob(F-Statistic)	0.00	0.00	0.00	0.00	0.00	0.00

Source: Staff estimates. Sample (total pool) contains 142 monthly observations from 2008Q1-2011Q1 for the following countries: Austria, Belgium, Finland, France, Germany, Greece, Italy, Ireland, Netherlands, Portugal, Spain.
Stock index remains insignificant if included as first differences instead of levels; ***p<0.01, **p<0.05, *p<0.1.

C. Conclusion

11. **The reemergence of perceived credit default risk for euro area sovereigns is a key legacy of the global financial crisis.** This note has provided some evidence that the associated premia embedded in sovereign credit costs are closely correlated with private funding costs and likely in large part passed on to the firms located in these countries. This is the case not only for banks but also for other non-financial firms, including telecoms, utilities, and others.

12. **First and foremost, strict fiscal consolidation is needed in countries with high public debt and funding costs.** If sustained, however, significant differences in the cost of private capital across countries reflecting sovereign concerns should complicate monetary policy and may trigger a relocation of capital intensive activities to low risk/cost destinations. Large banks and other firms that rely on external debt financing may await a similar process of consolidation across Europe that national airlines experienced over the past decade, although for different reasons. However, member states may resist such developments which could trigger protectionism and fragmentation of markets with highly adverse economic consequences.

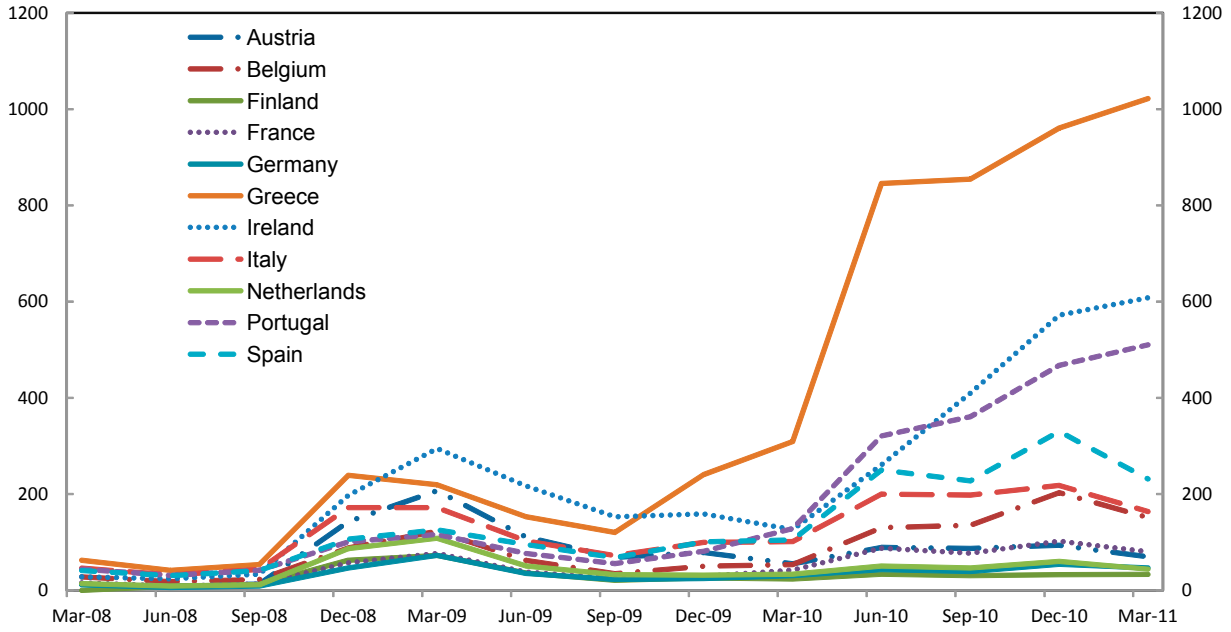
13. **To avoid such setbacks in economic and financial integration of Europe's economy the links between sovereigns and firms located in their jurisdiction will need to be loosened.** How this could be achieved in practice is open to debate but further European integration along the following lines should help in breaking the financial links between firms and their national sovereigns and eliminate possible channels through which costs associated with sovereign default risk could affect private funding costs and vice versa:

- European instead of national support schemes for bank restructuring or resolution support should decouple banks from their national sovereign and significantly reduce differences in banks' debt costs across Europe. Moreover, they could internalize the negative external effects of ailing banks on the entire euro area financial sector and facilitate resolution of cross-border institutions and cross-border M&As.

- Harmonizing regulation and taxation and working towards the introduction of a common corporate tax for large firms would help. This would eliminate the threat of large effective corporate tax increases in a country where the sovereign is under financial pressures, or even may default on its debt obligations.

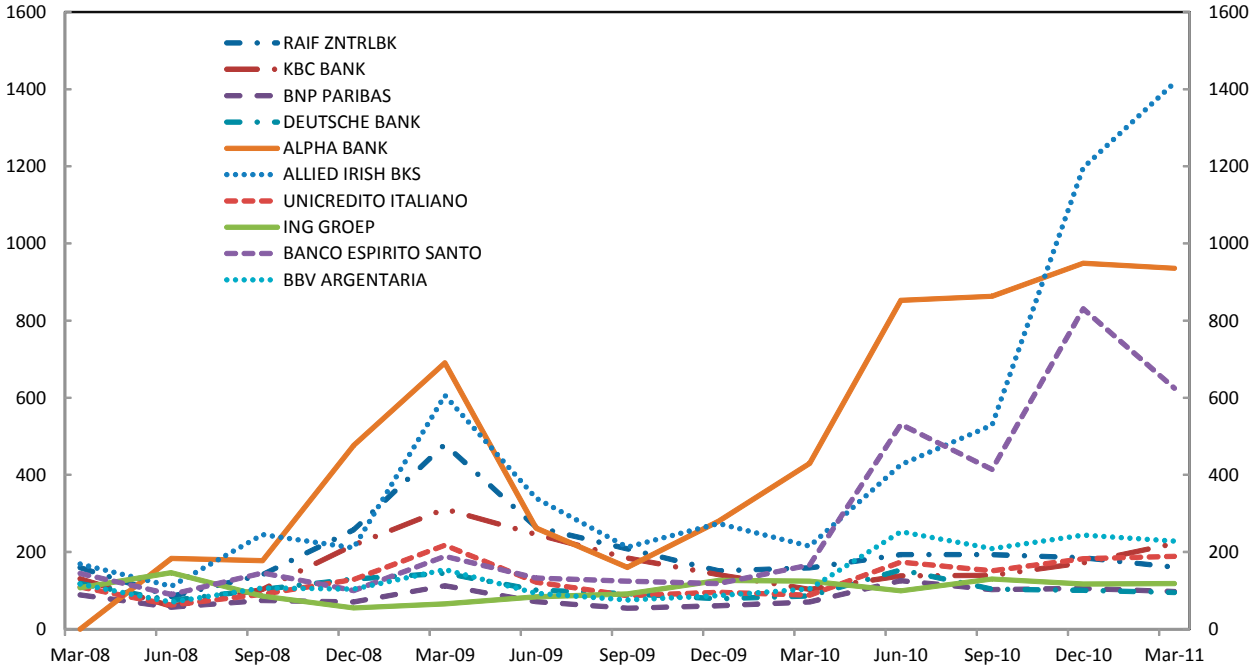
- A strong role for European competition and supervisory authorities should accompany restructuring and any cross-border consolidation of banks and other firms that may occur to safeguard competition and financial stability.

Figure I.1. Monthly 5-year Sovereign CDS Premia of Selected Euro Area Countries



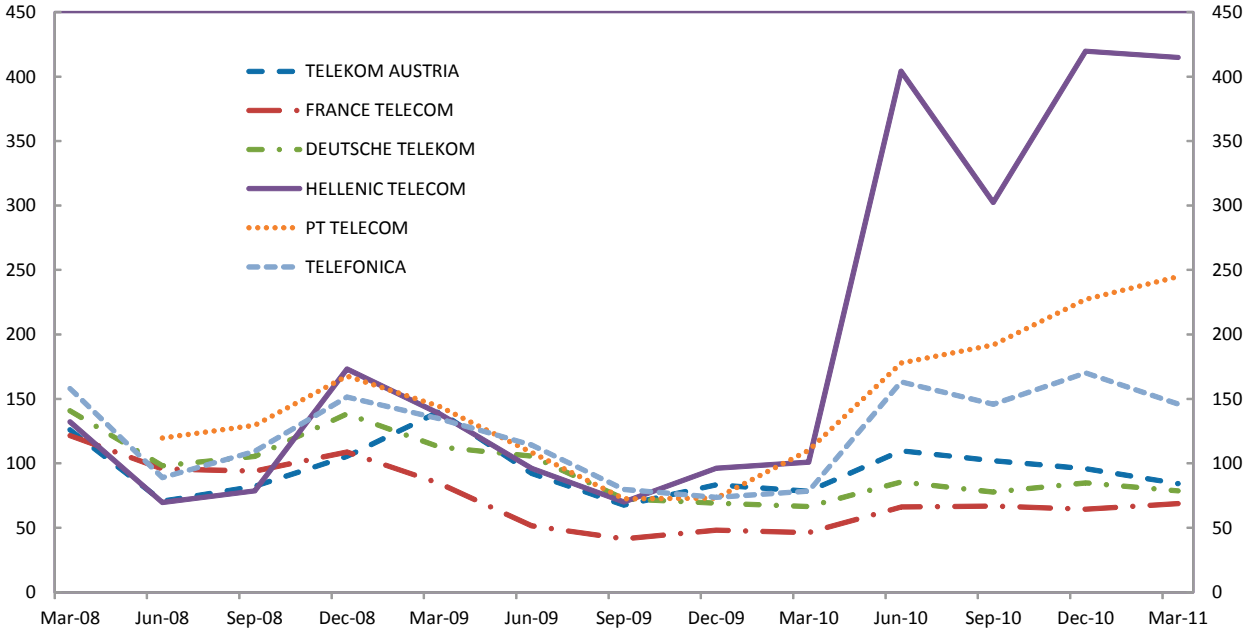
Source: DataStream

Figure I.2. Monthly 5-year CDS Premia of Large Banks in Selected Euro Area Countries



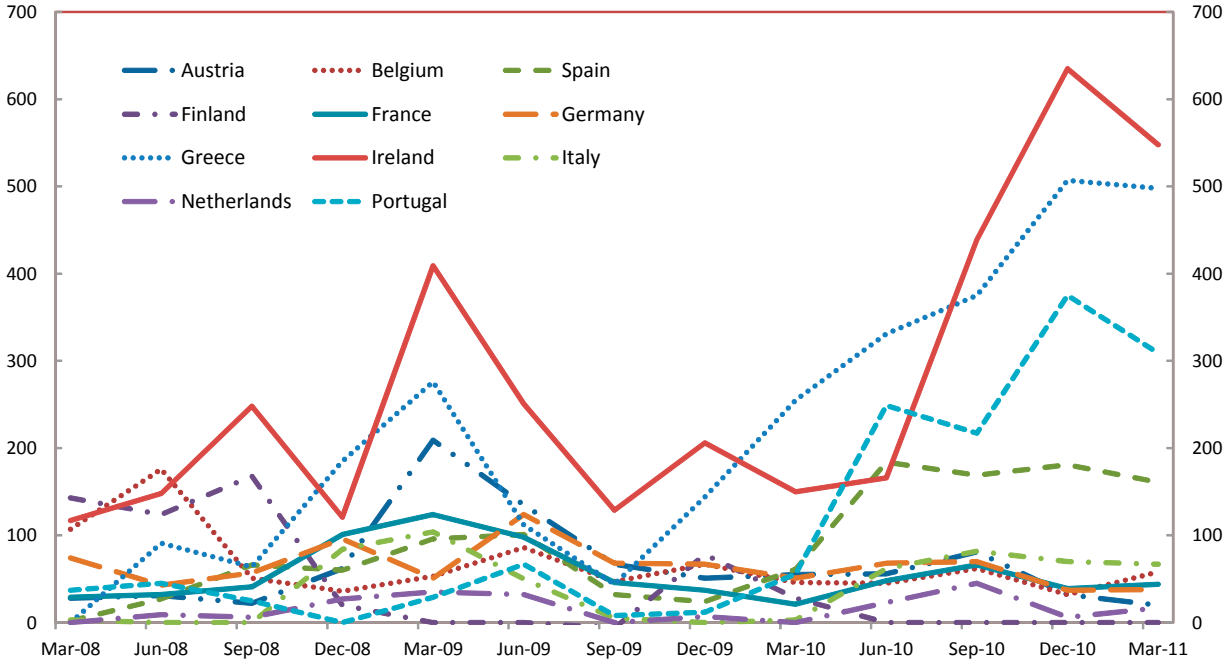
Source: DataStream

Figure I.3. Monthly 5-year CDS Premia of Telecom Firms in Selected Euro Area Countries



Source: DataStream

Figure I.4. Estimated Country Effects for Selected Euro Area Countries



Source: Staff estimates.

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APPENDIX I. DATA

The sample includes 5-year CDS data of all firms located Austria, Belgium, Finland, France, Germany, Greece, Italy, Ireland, Netherlands, Portugal, and Spain available from Datastream or Bloomberg. For the smaller countries the sample size is relatively small and for all countries individual CDS are excluded if they trade above 1500 basis points. Moreover, CDS that do not show any trading activity within a month (featuring constant CDS premia) are excluded as well.

The credit rating factors are defined as follows:

Credit _Factor1 = 1 for Aaa-Aa3 (Moody's) and AAA-A+(S&P)
Credit _Factor2 = 1 for A-A3 (Moody's) and A-BBB+(S&P)
Credit _Factor3 = 1 for Baa-Baa3 (Moody's) and BBB-BB+(S&P)
Credit _Factor4 = 1 for all lower ratings
Credit _Factor5 = 1 no rating available

II. ECB Policy Measures and Euro Area Banks[4]

A. Introduction

14. **Since the start of the current financial crisis in mid-2007, governments and central banks across advanced countries have implemented multiple standard and nonstandard measures to safeguard their financial systems.** In the initial phase of the crisis, risks were confined to U.S. subprime asset, banks' exposures, and funding profiles. In order to offset increased liquidity, counterparty, and credit risks, central banks started lowering interest rates (i.e., standard policy measures), but also introduced a number of nonstandard policy measures, such as broader access to liquidity (credit easing) and temporary FX swap lines. Following the failure of Lehman in September 2008, governments in advanced countries injected capital in banks, guaranteed liabilities and purchased/guaranteed impaired assets, in order to avoid widespread bank defaults. At the same time, central banks beefed up lender of last resort operations and started quantitative easing (IMF 2009a). In the euro area, the ECB reacted with a series of interest rate reductions, the expansion of liquidity provision to banks at longer maturities and under fixed rate full allotment (FRFA), expanded the collateral framework and set up a covered bond purchase program (CBPP) for 60 billion euros.

15. **The intensification of the financial crisis in the euro area in 2010 forced European authorities to take additional measures.** In late 2009, concerns started to emerge about a number of euro area governments' ability to continue to support their banking sector as well as about the size and sustainability of their debt and deficits. Government bond spreads reached historic levels in a number of periphery countries and in May 2010, Greece received financial assistance from other euro area countries and from the IMF. The European Financial Stability Facility (EFSF) was created to cover the future needs of member states with solvency problems and was accessed by Ireland in November 2010 and by Portugal in May 2011.

16. **The ECB contributed to the stabilization of the euro area by introducing additional nonstandard measures.** In May–June 2010, it established the securities market program (SMP) to purchase government bonds in secondary markets, provided additional FRFA long-term refinancing operations (LTROs) and reactivated USD swap lines with the Federal Reserve. The ECB's balance sheet expanded from 1 to 1.8 trillion euros and long-term refinancing increased from around 20 percent in 2005 to over 90 percent by early 2010. As to the standard measures, the ECB interest rate was maintained at a 1 percent lower bound between May 2009 and April 2011. The ECB considered its nonstandard measures necessary for sustaining financial intermediation in the euro area and maintaining the link between the official ECB policy rate, money markets and the market for longer-term securities (ECB, 2010).

[4] Prepared by Nico Valckx.

17. **While previous research examined the effectiveness of crisis-related policy measures, none examined directly their impact on banks.** A number of papers have previously examined the effects of standalone government rescue measures on bank equity prices, CDS spreads and other market indicators (see, e.g., IMF (2009b), BIS (2009), King (2008)). Others analyzed the impact of central bank measures on selected money and capital markets (see, e.g., Gagnon and others (2010) for the U.S., Joyce and others (2010) for the U.K., Beirne and others (2011) for the ECB's CBPP) and on credit and GDP (Borio and Disyatat (2009), Gambacorta and Marqués-Ibañez (2011), Peersman (2010), Fahr and others (2010)). Also related is a whole strand of research on the effects of monetary policy announcements on bank stock prices and interest rates (see, e.g., Blinder and others (2008)). However, until now, no studies seem to have specifically analyzed the impact of central bank policies on individual banks.

18. **This paper aims at examining the effects of ECB policy measures on individual euro area banks and on systemic risk.** A key question is whether ECB policy measures have affected banks uniformly, or whether their effectiveness depends on banks' initial condition (for instance, more strongly affecting weak banks). It is also interesting to know whether the impact is different for standard (interest rate) versus nonstandard policy measures, and whether the central bank's measures helped reduce systemic risk. These findings have relevance for the discussion of the ECB's exit strategy, including issues of speed, sequencing, and whether a special facility for weak banks would be desirable.

19. **The main findings are as follows.** The ECB policy measures affect a large number of banks, as measured by the reaction of bank stock prices to policy announcements on a high frequency basis. This is also confirmed by analysis of systemic risk indicators, which shows a significant impact of various nonstandard policy measures, especially for the ECB's move to fixed-rate full allotment (FRFA). For the other measures, however, the effects vary with the state of financial markets, location and the risk indicators at hand. At a quarterly frequency, the analysis shows a significant impact of standard and nonstandard policy measures on bank profitability. Here, the impact is shown to differ across banks depending on their strength in terms of capital, liquidity, funding and loan-deposit mix. Weak banks—defined as those scoring low on these dimensions—are negatively affected by rising interest rates, while most banks would benefit from withdrawal of nonstandard measures (except in the periphery, in case of reduction in liquidity provision), although the latter probably reflects the contemporaneous nature of the relation between nonstandard measures and banking health. The remainder of the paper discusses the methodology and data, presents and analyzes the results and ends with some policy conclusions.

B. Methodology and Data

Methodology

20. **The paper examines the effects of ECB policy measures on banks according to three complementary approaches.** The paper analyzes the effects of ECB measures, defined below, on: a) individual bank equity prices; b) indicators of systemic bank risk; and c) euro area banks' quarterly return on assets (ROA). Choosing for three different approaches helps overcome model-dependence and allows for assessing the impact of ECB measures both in the short and longer run, as well as at an individual bank and systemic level.

21. **First, an event study is undertaken on euro area banks' equity prices.** Bank equity prices are used to determine the short-term impact of various ECB policy measures around specific event days.[5] In line with the traditional event study approach for equities, the capital asset pricing model (CAPM) is used to obtain estimates of expected returns and to construct abnormal returns (MacKinlay 1997):

$$R_{it} = \alpha_i + \beta_i R_t + \varepsilon_{it} \quad (1)$$

where R_{it} denotes bank i's daily equity return, ε_{it} a bank-specific news factor, R_t the market return, and α and β are parameters estimated over a pre-specified estimation window. From equation (1), abnormal returns (AR) are computed as $AR_{it} = R_{it} - (a_i + b_i R_t)$ and cumulative abnormal returns (CAR) around the event as $CAR_{i,\tau} = \Sigma_\tau AR_{i\tau}$. These (cumulative) abnormal returns are further aggregated across events to obtain average bank-specific reactions to a set of policy measures. In addition to this parametric approach, a sign test was used, exploiting the sign of (cumulative) abnormal returns. Here the assumption is that the expected proportion of positive abnormal returns under the null hypothesis is 0.5 and CARs have equal probability of being positive or negative. Results for the latter test are not reported but were qualitatively very similar to those based on ARs and CARs.

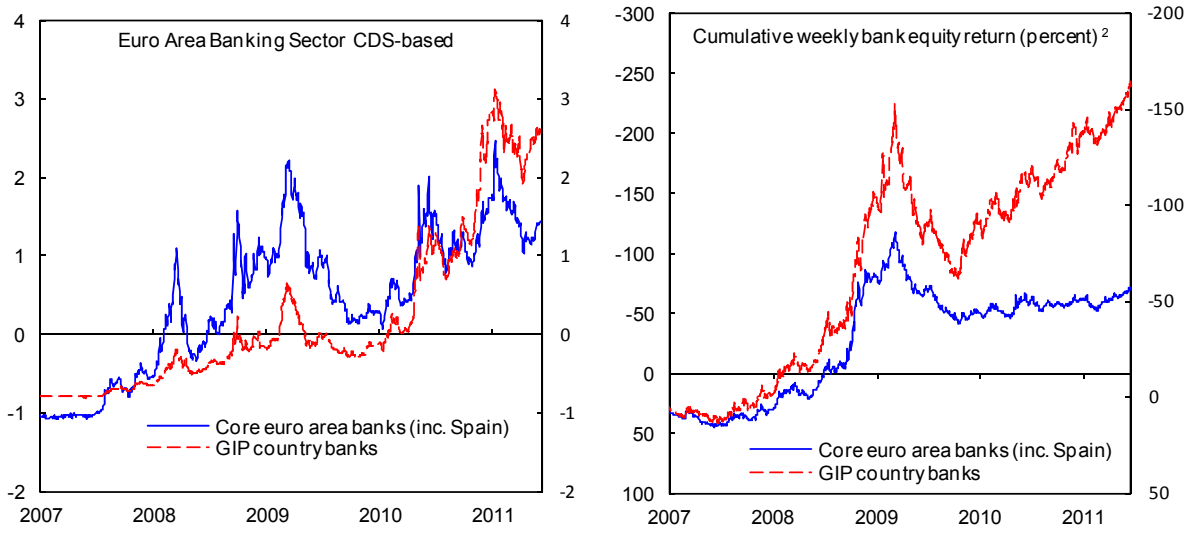
22. **Second, the paper estimates the impact of ECB policy measures on bank systemic risk indicators.** Two types of systemic risk indicators are calculated: the first one is the normalized score from a principal component decomposition of bank CDS spreads distinguishing between core and periphery banks (first chart).[6] The second one is based on cumulated bank equity returns (second chart). A vector autoregression (VAR) is run with these systemic risk indices, using daily data from late 2005 onwards, allowing for possible spillovers

[5] Bank stock prices express market-based expectations of future discounted profits, and any news which impacts market expectations should be reflected instantaneously in prices, according to the efficient market hypothesis (Fama, 1970).

[6] The first principal component of single-name CDSs are among the best indicators of systemic risk, according to Rodriguez-Moreno and Peña (2011).

between core and periphery banking sectors, and between the different proxies for systemic risk. The EONIA rate is taken as proxy for the ECB standard policy measure. ECB nonstandard policy measures are introduced as zero-one dummy variables and in the case of the CBPP, FRFA and for the period with 1-year refinancing, as step variables equaling one during their existence and zero elsewhere. The VIX, sovereign bond spreads and money market spreads are used as exogenous variables in the VAR to control for broad changes in risk perception. Alternatively, a variant with refinancing volumes, SMP purchases and CBPP purchases as quantity variables is estimated.

Euro Area Banking Risk Indices: 2007-2011
CDS and Equity Market-Based Risk Measures



Source: Bloomberg, Datastream and staff calculations.
[1] Normalized score from a principal component analysis on 5-year senior bank credit default swap spreads, estimated using daily data (1 Jan. 2005-3 June 2011).The core risk index comprises CDS spreads of 35 banks and the GIP risk index 11 banks (from GRC, IRL and PRT). The first principal component captures 85.4% of the common variation across core country banks and 83.1% across GIP country banks. 2/ Based on country indices of weekly banking sector equity returns, cumulated since January 2007 (equally weighted returns; inverted scale). Periphery consists of GRC, IRL and PRT (GIP). Core euro area consists of other euro area countries except SVK and EST (which do not have a banking equity index).

23. **Third, the impact of ECB policy measures on bank performance is estimated using panel regressions for quarterly bank return on assets (ROA).** For a panel of banks from the event study which report on a quarterly basis, baseline and extended models for ROA are estimated. The baseline model includes bank- and country-specific variables. As for bank-specific factors, lagged ROA, loan loss provisions, the tangible common equity ratio (*TCE*), the liquid asset ratio and the share of wholesale in total funding are included. The panel also controls for country-level GDP growth, GDP growth volatility and cross-section fixed effects. In a next step, this specification was augmented by standard and nonstandard ECB policy measures. Changes in the Euribor are used as standard policy measure and the share of LTROs in total ECB refinancing and the ratio of ECB bank lending to GDP are included as alternative proxies for nonstandard measures (see also in Data section below). These policy measures are interacted with various bank-specific factors which allow for a differentiation across strong and weak banks. *Ceteris paribus*, we expect that banks in a weaker state (less liquid, more reliant on

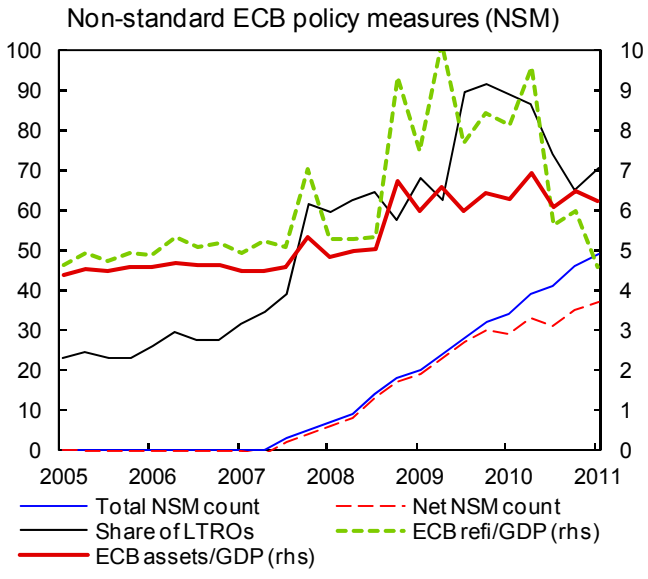
wholesale funding, with higher loan-deposit ratio and with lower TCE capital) should benefit more from the various ECB policy measures, although it can probably not be excluded that also strong banks benefit from some measures (e.g. from taking up liquidity from the ECB for a long period at a very low rate).

Data

24. **The ECB's policy instruments comprise both standard and nonstandard policy measures:**

- ***Standard policy measures*** relate to changes in the key ECB policy interest rate. When examining quarterly bank profitability, we use the 3-month Euribor rate, which is closely related to the ECB policy rate and has a greater impact on bank performance.

- ***Nonstandard policy measures*** associated with the financial crisis include changes in the collateral framework, changes in the procedure and profile of refinancing operations (fixed rate full allotment and additional longer-term operations), and purchases under the covered bond and securities market purchase programs, as well as the introduction and usage of USD swaps (see Table II.1A). The effects are differentiated for each measure according to whether they imply a loosening or a tightening (normalization), or whether purchases are high or low in case of the SMP. For the CBPP, only news related to its announcement and reactions to the monthly progress reports is examined. For the SMP, some discretion was necessary to determine whether interventions were 'high' or 'low'. Here, as well as in the case of standard measures, we analyze both event-day and broader event windows. When examining quarterly bank profitability, several proxies for nonstandard measures (NSM) are used: the share of long-term refinancing operations (LTROs) in total ECB operations, the size of the ECB balance sheet and the amount of ECB lending to banks as a percent of GDP or bank assets, as well as a news count based on the cumulative (net) number of measures announced during the quarter (see text figure). Interestingly, based on the share of LTROs and ECB lending to banks, some withdrawal of nonstandard policies is already underway. The same is true when considering the net versus gross count of nonstandard measures.



25. **The event study and quarterly ROA panel relies on a set of listed euro area banks.** For the event study, bank stock prices and company data are readily available from Bloomberg L.P. for a set of 86 euro area banks going back at least to early 2005 (the starting

point for our study; see Table II.2A for coverage).[7] For the analysis of quarterly bank ROA, a subset of 60 banks with available income and balance sheet information is examined.

C. Results

Event study results

26. **As expected, the ECB's conventional interest rate policy affects a significant number of banks.** On the event day, abnormal returns are significantly different from zero for 38 out of 86 banks (16 positive, 22 negative) in case of easing (excluding the October 15, 2008 rate decrease, which corresponded with other measures) and for 18 banks (13 positive, 5 negative) during the tightening cycle of 2005 (Figure II.1). Similarly, for CARs, results are similar in both easing (31 significant CARs: 14 positive, 17 negative) and tightening (13 significant CARs: 3 positive, 10 negative) cycles. The correlation between ARs and CARs is positive and significant: those banks that exhibit stronger one-day abnormal returns also tend to have more persistent multi-day abnormal returns (simple correlation 0.593, Kendall's tau 0.366). The stronger and more significant reaction of banks during the easing cycle probably reflects the fact that this took place during the financial crisis when bank stock prices reacted more strongly to policy decisions than before. Moreover, official interest rate reductions typically are more quickly translated into banks' lending rates and involve a compression in banks' net interest margins, which tends to negatively affect profitability and stock prices. This effect appears especially important in countries with predominantly floating rate loans, such as Ireland and Portugal.

27. **Different nonstandard measures also affect a large number of banks.** The expansion of refinancing operations and the change to FRFA, purchases under the CBPP and SMP, and the broadening of the collateral base were all associated with significant ARs for one third of the banks (see also Figure II.1). News on USD swaps affected nearly half of the bank ARs significantly. The majority of significant reactions are attributable to negative ARs, except for the news on the CBPP and USD swaps, where mainly positive ARs are found. The subsequent and still ongoing normalization—including the expiration of one-year LTROs, the (temporary) move back to variable-rate tenders, the tightening of the collateral framework and low SMP activity—affect between 10 and 30 percent of all banks, with mostly negative ARs for refinancing operations, suspension of USD swaps and SMP purchases. Similar results hold for longer event windows, judging from the similar size and patterns in the CARs. This suggests that announcements of unconventional measures are mostly perceived as reflective of the high

[7] Alternatively, event studies can also be set up with bank credit default swap (CDS) spreads, but these are available for a much smaller subset of banks and the series remain at quasi-constant levels until late 2007. For the analysis of interest rate policy effects, this is too short. However, as indicated above, bank CDS spreads are used for an impact analysis of the ECB's policy measures under the first approach (as a systemic risk indicator).

uncertainty in the market and the relative scarcity of fundamental information in the midst of the crisis. Furthermore, it appears that bank stock returns react broadly similar to positive and negative news about the ECB's unconventional policies, i.e., banks that underperformed on the day of credit easing measures tend to respond in the same direction to tightening or withdrawal of the same measures (correlations between 0.118 and 0.242).

28. **These results lead to two questions which are answered by subsequent analysis:** 1) did ECB policy measures significantly reduce risks at a broader systemic level, and 2) do ECB policy measures have distributional effects, i.e., do they affect weak and strong banks, or core versus periphery, differently?

Impact on systemic risk

29. **Various nonstandard ECB policy measures appear to have a significant impact on systemic bank risk indices, but standard interest rate measures did not.** In the 4-variable VAR with daily data, announcements of standard policy measures (dummies for interest rate changes) did not impact the systemic risk indicators. Also actual interest rates (or changes thereof) did not affect bank systemic risk indicators and hence were not included in the final specification (Table II.1). This probably reflects the fact that these measures are generally well anticipated by market participants and hence have no impact on market prices or risk.[8] Various nonstandard measures, on the other hand, seem to significantly influence bank systemic risk across both core and periphery countries. Their effect is both direct and indirect, through the interaction with some market risk variable, which means that their effect on systemic risk tends to be state-dependent. More specifically, the results can be summarized as follows:

- ***Bank credit default versus equity risk indicators.*** Nonstandard measures appear to have overall a more significant impact on bank credit default than on equity risk indices, with 12 versus 8 (out of 18) significant impact effects.

- ***Core versus periphery.*** For periphery banks, nonstandard measures have a strong impact on credit default risk indices but almost none on equity risk indices. For core banks, the impact is divided roughly equal across both types of risk indicators.

- ***Median impact.*** The policy of fixed-rate full allotment seems to result in lower credit risk and higher equity returns, both in periphery and core euro area countries and hence appears to bring down bank systemic risk. This is in line with market intelligence which suggests that the ECB's FRFA policy is important for banks. Apart from that, there is no consistent pattern as regards the impact of the other nonstandard measures on the bank risk indices, evaluated at the median of the market risk variables: sometimes they are

[8] One could even add that interest rate measures also generally are not intended to impact systemic risk.

positive and sometimes negative. For instance, easing of liquidity provision and CBPP tend to reduce bank credit default risk, while during the 1-year LTRO window, there was an increase in bank credit default risk. News on high SMP purchases tends to reduce credit default risk for core banks, while raising it for periphery banks. Hence, when evaluated at the median market condition, the systemic risk impact of nonstandard measures is very instrument-specific, without a clear overall picture emerging.

- ***State-dependency.*** The impact of nonstandard measures varies across financial market conditions, judging from differences in signs of the marginal effects at the two ends of the distribution. For instance, measures that ease liquidity provision reduce default risk and increase equity returns when euribor-eonia spreads are low (at the 10^{th} percentile), but vice versa when they are high (at the 90^{th} percentile of the spread distribution). With news on SMP purchases, equity returns are boosted when the VIX index is low but fall when VIX is high.

Impact on banks' quarterly performance

30. **Both standard and nonstandard measures affect bank performance.** When estimating a quarterly bank ROA panel with LTRO as proxy for nonstandard policies and *TCE* as state variable, both standard and nonstandard policy measures significantly affect bank performance (Table II.2, top panel). However, with wholesale funding or the loan-deposit ratio as state variable, only standard policy (interest rate changes) appears to affect banks' ROA, while with liquidity, only nonstandard measures do. Hence, the significance of ECB policy measures on bank performance depends somewhat on the state variable used, although it is not entirely unreasonable that liquidity overtakes the significance of interest rate effects, while more structural bank-specific factors such as wholesale and loan-deposit ratios subsume the effect of the more structural, nonstandard measures. When estimating the panel with ECB lending as a percent of GDP as proxy for nonstandard policies, the significance of nonstandard measures changes: they lose significance in the models with TCE and liquidity as state variable, but gain significance in the model with wholesale funding. The fact the wholesale funding plays an important role in the model with ECB lending as proxy for nonstandard policies is not entirely implausible, given the substitution of market funding (wholesale and interbank) and ECB lending during the crisis.

31. **Differentiating across banks, higher interest rates appear to benefit stronger banks, while during periods with heightened nonstandard policies, all banks seem to suffer.** In order to capture the full effect of policy measures on ROA, one needs to account for both their direct and indirect impact, evaluated at various levels of the interaction term (Table II.2, bottom panel). This shows that stronger banks (i.e., banks with *TCE* and liquidity at the upper 10^{th} or wholesale funding and loan-deposit ratios at the lowest 10^{th} percentile) achieve higher ROA throughout this period in response to standard policy measures (tightening of interest rates). This is in line with expectations, since weak banks—defined as those in the bottom 10 percent of the distribution of the aforementioned bank-specific state variables—may be more vulnerable to

increases in the cost of capital and funding, because they are perceived as more risky by market participants or have a smaller deposit base (knowing that bank revenues improve as deposits adjust less fully to interest rate increases; see, e.g., Gropp and others (2007)). Hence, according to these results, weak banks should raise capital in order to reduce the negative impact from withdrawal of standard measures. However, in response to an increase in nonstandard measures (a raise in either the LTRO share or ECB bank lending to GDP), virtually all banks—both weak and strong—appear to perform worse. This may reflect the contemporaneous nature of the relation between nonstandard measures and banking health: when banking performance deteriorated across the board as a result of the financial crisis, nonstandard measures were enacted to offset the risks to financial stability. Conversely, one may expect that these measures are withdrawn only when banks have sufficiently recovered from the crisis and would thereby not have negative repercussions on bank performance.[9]

32. **Simulations confirm that higher interest rates would adversely affect weak banks, but not necessarily banks in the periphery, and improvements in ROA from exiting nonstandard measures are broad-based.** A simulation exercise is undertaken, based on the above estimations and ROA from 2010:Q4, and assumes a 50 basis points increase in interest rates. Separately, a withdrawal of nonstandard measures is assumed—either reducing the LTRO share by 25 percentage points (in the specification with *TCE* as state variable) or reducing ECB lending to financial institutions in the euro area by 1 percent of GDP (in the specification with wholesale funding as state variable). In both cases, this would bring these nonstandard measures back to pre-crisis levels. Furthermore, another set of simulations is reported, distinguishing banks by location, based on similar panel estimations as in Table II.2, but interacting ECB policy measures with a location dummy instead of bank-specific state variables. The results are as follows:

- ***Interest rate increase.*** Taking 2010:Q4 as a starting point, a 50 bps increase in interest rates would have relatively small overall effects on banking sector ROA, although there appear to be distributional effects: weak banks would see their profits substantially reduced, while strong banks would gain (text figure).[10] Also location appears to matter: periphery banks, although starting from overall losses in 2010:Q4, would experience a substantial improvement in ROA, while other banks would see little change on average. One plausible explanation may be the difference in sensitivity of assets and liabilities to interest rate changes: new loan volumes at GIP banks are extended at very short-term maturities, which allows for a faster repricing in case of interest rate increases. GIP banks

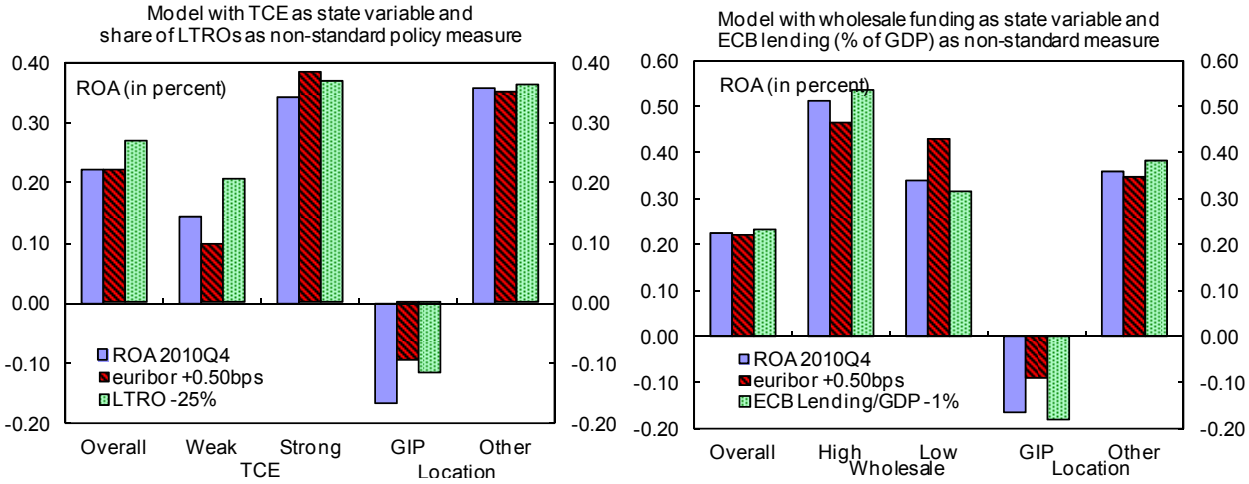
[9] To verify whether this contemporaneous relation is sample-specific, the panel models were estimated over a shorter time span, ending before the onset of the crisis (although this becomes then a very small sample, 2005:Q1-2007:Q3). Results remained qualitatively similar.

[10] The overall impact is evaluated at the average *TCE* ratio in 2010:Q3, while the impact on weak (strong) banks is evaluated at the 10^{th} (90^{th}) percentile of the *TCE* ratio, taking into account both the direct effect on ROA of interest rates and the interaction with the *TCE* ratio level.

also have TCE ratios slightly above the average of the distribution. Furthermore, strong banks (with *TCE* capital buffers at the top of the distribution) generally have higher deposit funding and higher loan-deposit ratios, which makes them less sensitive to repricing of liabilities and more to asset repricing, relative to weak banks (i.e., with *TCE* ratios in the bottom of the distribution). A similar pattern emerges from a model with wholesale funding as the state variable (second figure): overall, there is very little impact on ROA from an interest rate increase, but banks with high reliance on wholesale funding seem to suffer, although they start from a very high ROA, while those with low wholesale funding benefit, because they are less sensitive to a repricing of liabilities and have less leverage. Also here, GIP banks (with wholesale funding ratios around the average of the distribution) stand to cut back their losses significantly.

- ***Withdrawal of nonstandard measures.*** A reduction in the share of LTROs would lead to gains across the board, and across different types of banks. This possibly reflects the fact that nonstandard measures were expanded as the financial crisis evolved, and a withdrawal would likely coincide with a recovery of the financial sector. In other words, markets may expect nonstandard measures to be in place for as long as needed and they may be withdrawn when banks are able to record sound operating results. Results using wholesale funding as state variable and ECB lending as a percent of GDP as nonstandard measure are broadly similar. An exception appears to be GIP banks, which see their ROA decline following a reduction in ECB lending (as opposed to the shift in long versus short refinancing using the LTRO variable as nonstandard policy measure in the first text figure). This may reflect the sensitivity of their banking sector to outside financing and their difficulty to access market financing.

Simulation of Euro Area Banks' ROA
for Increase in Euribor Rate and Withdrawal of Nonstandard Measures



Source: Bloomberg, staff computations.
Note: Shown are bank return on assets (ROA) in 2010Q4, after a 50 basis points increase in the euribor interest rate, a decrease in the share of LTROs by 25 percent (left figure) and in ECB lending by 1 percent of GDP (right figure), for all banks and differentiated by levels of capital strength (left), wholesale funding (right) and location. Overall, weak/strong TCE and high/low wholesale compute ROA impact using the average, 10th and 90th percentile from the respective Q3 2010 ratios. GIP is for banks located in GRC, IRL and PRT.

D. Conclusions and Policy Implications

33. **Four broad messages can be taken away from the above findings:**

- Both standard and nonstandard ECB policies matter for a large number of banks, judging from the cross-section of abnormal stock returns. Reactions to interest rate changes appear to have been asymmetric: more banks responded significantly and negatively to declines than to rate increases, which may be due to greater sensitivity of assets than liabilities to repricing risk. Hence, from this perspective, future gradual interest rate increases may not affect euro area bank equity prices too negatively, especially if the ECB policy is well communicated to markets. Furthermore, nonstandard measures appear to have generated positive and significant abnormal returns for a large number of banks.

- At a systemic level, the change in operating procedures to fixed-rate full allotment and—to some extent, the CBPP and measures to expand liquidity provision—helped to reduce systemic risks. However, for the rest, the evidence on the effects of nonstandard policy measures on system risk indicators is mixed and appears to be dependent on the state of financial markets. In terms of exit from nonstandard measures, withdrawal from liquidity measures and low purchases under the SMP seem to have been market-neutral, as they did not impact systemic risk indicators. Going forward, it may be necessary to keep nonstandard measures in place as long as systemic risk indicators remain elevated.

- At a quarterly frequency, there is evidence of significant effects of both standard and nonstandard ECB policy measures on euro area banks. Their impact also seems to vary according to various dimensions: weak banks (with low capital, high wholesale reliance,

high loan-deposit and low liquidity) appear to suffer from a policy of higher interest rates, while strong banks and banks in the periphery benefit. In response to nonstandard measures, most banks would benefit from an eventual withdrawal, except banks in the periphery dependent on access to ECB lending, although this may more reflect comovement rather than causality between nonstandard measures and bank health. These findings are confirmed by simulations on 2010:Q4 profits.

- In sum, the results suggest care should be taken not to adversely affect weak banks and banks in the periphery. Raising interest rates and withdrawal of nonstandard measures should be properly timed, done in a proper sequence, and communicated consistently and well in advance to markets, as appears to be the case. This way, banks have sufficient time to adjust and look for alternative funding and capital to support or improve their performance. The findings also somehow support the ECB's separation principle, allowing decisions on interest rates to be independent from those on nonstandard measures, as the impact on bank performance appears to be different across these policy measures.

Table II.1. Contribution of ECB Policy Measures in Systemic Risk VAR

	VAR estimation results			
	CDS bank default risk		Cumulative equity return	
	GIP	Core	GIP	Core
Risk factors:				
VIX	0.0001	0.0003[c]	-0.024[a]	-0.017[a]
Δ*VIX*	0.002[a]	0.006[a]	-0.35[a]	-0.299[a]
Δ*GIP* sovereign spread	0.001[a]	0.003[a]	-0.10[a]	-0.047[a]
Euribor-EONIA spread	-0.00001	-0.00004	0.001	-0.002
Policy dummies and interaction terms:				
Liquidity [easing]	-0.087[a]	-0.033	0.60	1.59[c]
Liquidity [easing]*Euribor-EONIA spread	0.0015[a]	0.0004	-0.02	-0.03[b]
SMP [high]	-0.035	-0.178[a]	4.86[a]	2.12[b]
SMP [high]**VIX*	0.003[a]	0.008[a]	-0.18[b]	-0.08[b]
Step variables and interaction terms:				
FRFA	-0.005[c]	-0.010[a]	0.26	0.26[b]
CBPP	-0.004	-0.004	0.20	0.14
CBPP*Δ*GIP* sovereign spread	-0.001[a]	0.0006[c]	0.02	-0.003
1-year LTRO	0.007[b]	0.005	-0.24	-0.14
1-year LTRO*Δ*GIP* sovereign spread	0.0016[a]	-0.0007[c]	0.014	0.024[b]
R^2adj (*N* = 1440)	0.365	0.382	0.245	0.315
	Marginal policy effects			
Liquidity [easing]				
Euribor-EONIA spread at 10th percentile	**-0.052**	-0.022	0.14	**0.80**
Median	**-0.017**	-0.012	-0.31	**0.02**
90th percentile	**0.047**	0.006	-1.13	**-1.38**
SMP [high]				
VIX at 10th percentile	**0.019**	**-0.040**	**1.96**	**0.77**
Median	**0.034**	**-0.003**	**1.18**	**0.40**
90th percentile	**0.063**	**0.071**	**-0.39**	**-0.34**
CBPP				
Δ*GIP* spread at 10th percentile	**0.003**	**-0.009**	0.03	0.16
Median	**-0.004**	**-0.004**	0.20	0.13
90th percentile	**-0.018**	**0.003**	0.50	0.09
1-year LTRO				
Δ*GIP* spread at 10th percentile	**-0.008**	**0.012**	-0.38	**-0.37**
Median	**0.008**	**0.005**	-0.24	**-0.13**
90th percentile	**0.029**	**-0.004**	-0.05	**0.18**

Source: Bloomberg L.P., Datastream and staff computations.

Top panel reports VAR coefficients for core and GIP (GRC, IRL, PRT) bank credit default and bank equity risk indices, estimated with daily data from November 2005-May 2011. Bottom panel reports marginal impact of ECB policy measures on systemic risk indicators, at various levels of the interaction terms. The VAR controls also for the level and change in the VIX, changes in the average GIP 10-year bond spread vis-à-vis Germany (Δ*GIP* sovereign spread) and the Euribor-EONIA spread. ECB policy measures are captured by dummy and step variables (equal to one for the period when active and zero otherwise). Insignificant policy measures were deleted from the VAR. The VAR was estimated in first differences to ensure stationarity and with 3 lags. To save space, estimates of the endogenous variables are not reported.

Statistically significant at [a]: 1, [b]:5 and [c]: 10 percent. In bold are significant marginal effects based on the significance of the parameters (at 10 percent level).

Table II.2. Panel Regression Estimates of Banks' ROA and Marginal Effects of ECB Policy Measures

	Base	***STATE* variable**				***STATE* variable**			
	Model	***TCE***	***LIQ***	***WHOLE***	***LDEP***	***TCE***	***LIQ***	***WHOLE***	***LDEP***
Lagged ROA	0.619[a]	0.604[a]	0.608[a]	0.604[a]	0.601[a]	0.607[a]	0.618[a]	0.614[a]	0.611[a]
LLP	-0.707[a]	-0.718[a]	-0.692[a]	-0.701[a]	-0.709[a]	-0.730[a]	-0.696[a]	-0.705[a]	-0.713[a]
GDP growth	0.024[a]	0.017[b]	0.013[c]	0.015[b]	0.016[b]	0.022[a]	0.021[a]	0.021[a]	0.022[a]
GDP volatility	0.004[a]	0.003[b]	0.003[b]	0.002[c]	0.003[b]	0.004[a]	0.004[a]	0.003[a]	0.003[a]
TCE	0.114[a]	0.099[a]	0.112[a]	0.115[a]	0.113[a]	0.105[a]	0.113[b]	0.115[a]	0.113[a]
Wholesale funding	-0.004[b]	-0.006[a]	-0.005[b]	-0.003	-0.004[c]	-0.005[b]	-0.004	0.003	-0.004[b]
Liquid assets	0.007[b]	0.005[c]	0.001	0.006[b]	0.003	0.006[b]	0.003	0.007[b]	0.004
Loan/deposit	-	-	-	-	0.0002	-	-	-	0.001
ECB policy measures		***NSM*=*LTRO* share in ECB operations**				***NSM*= ECB operations/GDP**			
∆*Euribor*		-0.140[a]	-0.006	0.210[a]	0.092[b]	-0.132[b]	-0.014	0.255[a]	0.097[b]
∆*Euribor*STATE*		0.030[a]	0.001	-0.005[a]	0.000[a]	0.027[a]	0.0004	-0.006[a]	-0.001[a]
NSM		-0.003[a]	-0.005[a]	-0.001	-0.001	-0.014	-0.028	0.036	0.009
*NSM *STATE*		0.0003[c]	0.0001[c]	$-2x10^{-5}$	$-4x10^{-6}$	0.001	0.0006	-0.001[b]	-0.0001
R^2 **adj.** (*N*=1066)	0.839	0.841	0.840	0.841	0.838	0.840	0.838	0.841	0.838
∆Euribor:		**Marginal policy effects**							
STATE at 10th percentile		**-0.078**	0.003	**0.127**	**0.054**	**-0.076**	-0.008	**0.151**	**0.054**
Median		**0.005**	0.010	**0.004**	**0.022**	**-0.001**	-0.002	**-0.002**	**0.019**
90th percentile		**0.118**	0.029	**-0.097**	**-0.019**	**0.100**	0.013	**-0.129**	**-0.026**
NSM:									
STATE at 10th percentile		**-0.025**	**-0.035**	-0.013	-0.014	-0.012	-0.019	**0.018**	0.002
Median		**-0.017**	**-0.023**	-0.019	-0.016	-0.009	-0.010	**-0.009**	-0.004
90th percentile		**-0.008**	**0.007**	-0.024	-0.019	-0.004	0.010	**-0.031**	-0.011

Source: Bloomberg, Haver Analytics, ECB, IMF staff computations

Notes: Upper part of the table shows panel estimates for a cross-section of 60 euro area stock-listed banks from the wider sample of 86 banks used in the event study for which quarterly financial statement data are available. Estimation period is 2005:Q1-2011:Q1. Cross-section fixed effects are included but not reported here. Bank-specific variables are lagged one quarter in order to avoid strong endogeneity. *LLP*: loan loss provisions (percent of assets), *TCE*: tangible common equity ratio, *LIQ*: liquid asset ratio, *WHOLE*: share of wholesale in total funding, *LDEP*: loan-deposit ratio. Besides a baseline model, several variants are presented, interacting standard and non-standard ECB policy measures with bank-specific state variables (*STATE*). The standard policy measure is the change in the 3-month Euribor rate (∆*Euribor*), while the non-standard measure (*NSM*) is either the percentage of long-term refinancing (LTRO) in total bank refinancing or total ECB bank lending as a percent of GDP.

Lower part of the table computes marginal effects on bank ROA of a one percentage point change in interest rates, ECB operations/GDP and of a 10 percentage point change in the share of LTROs.

Statistically significant at [a]: 1, [b]: 5 and [c]: 10 percent level. In bold are significant marginal effects based on the 10 percent significance level of the parameter estimates.

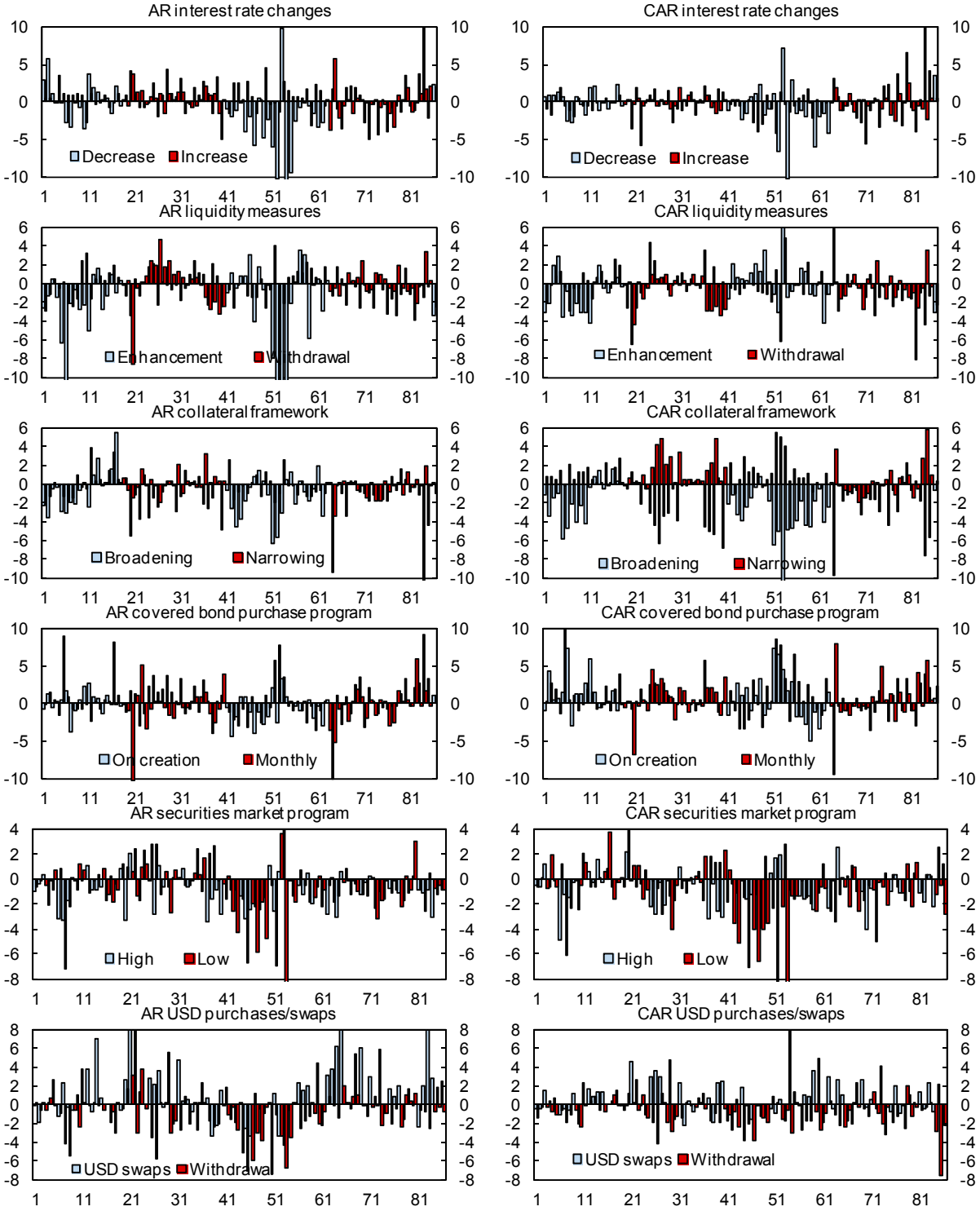
Table II.1A: Set of ECB Policy Measures

Standard Interest Rate Policy Measures			
December 1, 2005	Increase (beginning of cycle)		
March 2, 2006	Increase	October 8, 2008	Decrease corridor
June 8, 2006	Increase	October 15, 2008	Decrease policy rate, turmoil EUR
August 3, 2006	Increase	November 6, 2008	Decrease
November 2, 2006	Increase	December 4, 2008	Decrease
December 7, 2006	Increase	January 15, 2009	Decrease
March 8, 2007	Increase	March 5, 2009	Decrease
June 6, 2007	Increase	April 2, 2009	Decrease
July 3, 2008	Increase	May 7, 2009	Decrease
April 7, 2011	Increase (beginning of new cycle)		
Nonstandard Policy Measures (*NSMs)*			
SMP			
May-June 2010	start SMP/EFSF, high activity	July-Sep 2010	low activity
Oct-Dec 2010	high activity	Jan-April 2011	low activity (ex Jan 18)
Covered Bonds Purchase program			
May 7, 2009	CBPP announced		
June 4, 2009	CBPP detail		
July 6, 2009	CBPP start		
June 30, 2010	CBPP end		
Liquidity Measures			
August 9, 2007	FINE TUNING	December 3, 2009	Begin phasing out, indexation LTRO
August 22, 2007	supp LTRO 3m	December 15, 2009	1y LTRO-indexed FRFA
September 6, 2007	ECB meeting-supp LTROs	March 4, 2010	3M VARIABLE, MRO as FRFA
March 28, 2008	supp 6m LTRO, continue 3m LTRO	July 1, 2010	expiry 1y LTRO, FTO
May 2, 2008	expansion 25>50bn, 1m biweekly	September 30, 2010	expiry 1y LTRO, FTO
July 31, 2008	renewal 3m LTRO-50bn (Aug, Sep)	December 23, 2010	expiry 1y LTRO. FTO
September 4, 2008	renewal 3m, 6m LTRO (50bn/25bn)		
September 29, 2008	special refi 35d FA, variable r		
October 8, 2008	FRFA MROs, corridor 100bps		
May 6, 2009	1y LTRO FRFA announced		
June 23, 2009	1y LTRO		
September 29, 2009	1y LTRO		
May 10, 2010	reinstate FRFA 3m, USD, SMP, 6m LTRO		
September 2, 2010	3M LTRO indexed FRFA, renewed		
December 2, 2010	3M LTRO indexed FRFA, renewed		
Collateral Framework			
May 25, 2007	Residence criteria EEA	October 30, 2007	Amendments
April 8, 2010	graduated haircuts lower rated assets	November 12, 2008	Expansion collateral, 5% haircut
July 28, 2010	Increase haircuts	November 20, 2009	Ratings ABS 2nd best rule
April 29, 2011	loan-level ABS requirements	May 3, 2010	Greek debt eligibility criteria suspended
		October 8, 2010	changes ABS clawbacks/close links
		December 16, 2010	adds FTDs, addl ex close links
		March 31, 2011	suspension rating threshold for IRL debt
USD swaps			
December 12, 2007	measures to address pressures ST funding	January 18, 2010	discontinue CHF
March 11, 2008	measures to address liquidity pressures	January 27, 2010	discontinue swaps with Fed
July 30, 2008	measures to address liquidity pressures		
September 26, 2008	measures to address liquidity pressures		
October 13, 2008	measures to address liquidity pressures		
April 6, 2009	expanded swaps		
June 25, 2009	extend USD swaps		
September 24, 2009	continue USD swaps		
December 21, 2010	prolongation USD swaps till Aug 2011		

Table II.2A. Banks in the Sample for the Event Study and Panel Regression

	Country	Bank name		Country	Bank name
1.	AUT	Raiffeisen Bank International AG	42.	GRC	National Bank of Greece SA
2.	AUT	Erste Group Bank AG	43.	GRC	EFG Eurobank Ergasias SA
3.	AUT	Oberbank AG	44.	GRC	Alpha Bank AE
4.	AUT	Wiener Privatbank SE	45.	GRC	Piraeus Bank SA
5.	BEL	KBC Groep NV	46.	GRC	Agricultural Bank of Greece
6.	BEL	Dexia SA	47.	GRC	Geniki Bank
7.	CYP	Marfin Popular Bank PCL	48.	GRC	Emporiki Bank SA
8.	CYP	Bank of Cyprus Plc	49.	GRC	Marfin Investment Group SA
9.	DEU	Deutsche Bank AG	50.	GRC	Attica Bank
10.	DEU	Commerzbank AG	51.	IRL	Bank of Ireland
11.	DEU	Landesbank Berlin Holding AG	52.	IRL	Allied Irish Banks PLC
12.	DEU	DAB Bank AG	53.	IRL	Irish Life & Permanent Group
13.	DEU	Baader Bank AG	54.	IRL	Anglo Irish Bank Corp Ltd
14.	DEU	Aareal Bank AG	55.	ITA	UniCredit SpA
15.	DEU	UmweltBank AG	56.	ITA	Intesa Sanpaolo SpA
16.	DEU	Gontard & Metallbank AG	57.	ITA	Banca Monte dei Paschi di Siena SpA
17.	DEU	Bankverein Werther AG	58.	ITA	Unione di Banche Italiane SCPA
18.	DEU	Berlin-Hannoversche Hypothekenbank AG	59.	ITA	Banca Popolare dell'Etruria e del Lazio
19.	DEU	Wuestenrot & Wuerttembergische	60.	ITA	Mediobanca SpA
20.	DEU	IKB Deutsche Industriebank AG	61.	ITA	Credito Bergamasco SpA
21.	DEU	Oldenburgische Landesbank AG	62.	ITA	Banca Popolare di Milano Scarl
22.	DEU	HSBC Trinkaus & Burkhardt AG	63.	ITA	Piccolo Credito Valtellinese Scarl
23.	DEU	Merkur Bank KGaA	64.	ITA	Banca Popolare dell'Emilia Romagna Scrl
24.	ESP	Banco Santander SA	65.	ITA	Banca Intermobiliare SpA
25.	ESP	Banco Bilbao Vizcaya Argentaria SA	66.	ITA	Banca Finnat Euramerica SpA
26.	ESP	Banco Popular Espanol SA	67.	ITA	Banco di Sardegna SpA
27.	ESP	Banco de Sabadell SA	68.	ITA	Banca Popolare di Spoleto SpA
28.	ESP	Bankinter SA	69.	ITA	Banco di Desio e della Brianza SpA
29.	ESP	Banco Pastor SA	70.	ITA	Credito Artigiano SpA
30.	ESP	Banco Espanol de Credito SA	71.	ITA	Banca Profilo SpA
31.	FIN	Pohjola Bank PLC	72.	ITA	Unipol Gruppo Finanziario SpA
32.	FIN	Bank of Aland PLC	73.	ITA	Mittel SpA
33.	FIN	Norvestia OYJ	74.	ITA	Credito Emiliano SpA
34.	FIN	Sampo OYJ	75.	ITA	Banca IFIS SpA
35.	FIN	Amanda Capital OYJ	76.	ITA	Banca Carige SpA
36.	FRA	BNP Paribas	77.	MLT	Bank of Valletta PLC
37.	FRA	Credit Agricole SA	78.	NLD	ING Groep NV
38.	FRA	Societe Generale	79.	NLD	Van Lanschot NV
39.	FRA	Union Financiere de France BQE	80.	NLD	Aegon NV
40.	FRA	Natixis	81.	NLD	BinckBank NV
41.	FRA	Credit Industriel et Commercial	82.	NLD	KAS Bank NV
			83.	PRT	Banco Comercial Portugues SA
			84.	PRT	Banco Espirito Santo SA
			85.	PRT	Banco BPI SA
			86.	PRT	BANIF SGPS SA

Figure II.1. Euro Area Listed Banks: Abnormal and Cumulative Abnormal Returns
(January 2005–May 2011)



Source: Bloomberg L.P.
Figures show standardized abnormal returns (AR: left side) and cumulative abnormal returns (CAR: right side) for events listed in Table A.1. Values in excess of +/-1.96 are statistically significant at the 5 percent level.

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III. THE EUROPEAN SYSTEMIC RISK BOARD: EFFECTIVENESS OF MACROPRUDENTIAL OVERSIGHT IN EUROPE[11]

A. Introduction

34. **The role of macroprudential policy is to identify risks to systemic stability and to develop and implement a policy agenda so as to mitigate risks and build buffers to cushion the impact when crises occur**. To be effective, macroprudential policy rules need to be complemented by an element of discretion that takes into account all information and enables policy to respond flexibly to developments in the financial system. Because of this inherent need for judgment, the institutional framework that underpins decision-making and establishes powers to use macroprudential instruments plays a central role.

35. **In the EU context, the complexity of macroprudential oversight of the financial system is exacerbated by strong financial integration, including cross-border banking activities and integrated financial markets**. A supranational overlay is thus required to ensure that policy action can take account of the scope for cross-country externalities and interconnectedness. Coordination of policies at the EU level is needed also to reduce the possibility of regulatory arbitrage of national actions that is likely otherwise when capital and financial services can flow freely across national borders.

36. **The establishment of the ESRB in January 2011 is a crucial step in providing greater traction for macroprudential oversight at the EU level, as envisaged in the 2009 De Larosière report.** However, the ESRB's legal foundations imply that it has to establish its credibility under a set of institutional constraints—a complex decision making process (with 27 Member States and EU/euro area institutions being involved), no direct access to supervisory data, and no binding powers.[12] These constraints put a premium on close collaboration with other EU bodies, such as the ECB, the new European Supervisory Authorities (ESAs) and the European Commission.

37. **Perhaps less anticipated by the De Larosière report, the effectiveness of the ESRB also requires a sufficient level of preparedness of national macroprudential authorities and collaboration between the national and the EU level.** Effective macroprudential oversight across the EU is likely to require a "bottom-up" element to complete analysis and decision-making on the part of the ESRB, but will also require that "top-down" recommendations of the ESRB are implemented. This national element, conditioned by national information and mandates, will be important for identification of

[11] Prepared by Erlend Nier and Thierry Tressel

[12] Regulation (EU) No. 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union macro-prudential oversight of the financial system and establishing a European Systemic Risk Board.

risks and the development of national initiatives to mitigate risk. Strong national frameworks are needed also to ensure effective follow-up to risk warnings and recommendations of the ESRB. However, since macroprudential policy is likely subject to biases for inaction, as we shall discuss, ESRB risk warnings and recommendations are needed to strengthen the national resolve to take action. In this regard it is desirable for national mandates to contain an EU dimension, including a requirement to comply with ESRB recommendations.

38. **In addition to strong mandates and decision making powers, effective follow-up on ESRB risk warnings and recommendations will also require that an adequate and common macroprudential policy toolkit is in place in all Member States.** The macroprudential toolkit of EU countries should go beyond the small set of instruments on which there is already an international consensus, and should be flexible enough to address a range of sources and channels of transmission of systemic risks.

39. **The ESRB should move forcefully in developing the EU macroprudential policy toolkit and recommend legislative action on the part of the EU Commission to ensure that a common set of macroprudential instruments is put in place across EU Member States.** Once macroprudential policy is operational across the EU, a key role for the ESRB will be to provide an EU-wide perspective on risks arising from interconnectedness and financial imbalances across the EU. The ESRB will also have a key role to play in sanctioning and coordinating the use of macroprudential tools across the EU, so as to ensure appropriate reciprocity of macroprudential policy and to minimize cross-border arbitrage of national macroprudential action. The ESRB could finally provide a seal of approval when countries decide to use or to modify macroprudential instruments that interrelate with standards established across the EU.

40. **The paper is organized as follows.** Section B sums up the constraints under which the ESRB operates. Section C explains why national macroprudential frameworks will play an important role in completing risk analysis and ensuring follow-up on ESRB recommendations, and assesses recent changes in institutional models at the national level. Section D explores which tools should be established at national level so as to enable an effective and coordinated response to the build-up of systemic risks across the EU. In Section E, the paper argues for a strong role for the ESRB in establishing the EU macroprudential toolkit and in harmonizing use of macroprudential policies in a manner that ensures reciprocity across the EU. Section F concludes.

B. Institutional Constraints

41. **The ESRB was established under a set of constraints that may hamper its effectiveness,** as argued by Fund staff in the report of the European Financial Stability

Framework Exercise (EFFE).[13] The current set-up may be the outcome of a political economy process combined with a desire to maintain a balance of power among EU institutions.

42. **A first constraint is that the regulation does not envisage direct or automatic access to supervisory data for the ESRB.[14]** Difficulties to obtain such data may hamper assessment of systemic risk. This is a strong constraint in particular when there is a need to assess correlated exposures to particular sectors, the web of interconnections between individual financial institutions and their evolution over time.

43. **The ESRB will be subject to complex decision-making processes.** This second constraint is a consequence of the supranational dimension of the ESRB. Its General Board has a large membership covering all EU countries in addition to the ECB and of other EU institutions (the EU Commission, the ESAs). The sheer size of the board may slow decision-making and will require strong leadership on the part of its Steering Committee in setting the agenda. Another factor that may mitigate the strength of this constraint is that the General Board can make decisions by majority vote.[15]

44. **The ESRB has no binding powers.** It has no direct powers, e.g., in the calibration or setting of macroprudential instruments, nor the power to issue binding recommendations to any other EU or national body. Indeed, the fact that the ESRB has no legal personality under the treaty may rule out a material strengthening of its powers beyond those envisaged in the establishing regulation. Its influence will instead need to rely on its communication strategy, through formal risk warnings and non-binding recommendations as well as informal suasion, and on the quality of its analysis.

45. **The ESRB has limited resources.** This limited resource is complemented by the support provided by the ECB, and that provided by national authorities through their contributions to the work of the ESRB in its various working groups.

C. The Need for Effective National Macroprudential Policy Frameworks

46. **Because of the high degree of financial interconnectedness across the EU, the ESRB needs to play a leading role in macroprudential oversight for the region as a whole.** However, effective macroprudential policy across the EU also requires effective policy frameworks at the national level. First, local supervisory information and analytical

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[13] European Financial Stability Framework Exercise, Preliminary Findings and Recommendations, May 26, 2011, prepared by staff of the Monetary and Capital Markets, European and Legal Departments of the IMF.

[14] The regulation stipulates that requests from the ESRB for detailed data addressed to the ESAs will have to be ad hoc and motivated, and it does not provide a dispute settlement mechanism.

[15] Decisions within the General Board of the ESRB are generally taken by simple majority, but a majority of two thirds will be needed to adopt recommendations or to make a warning public.

expertise are required to analyze risks and policy options in a manner that takes account of local conditions. Second, the national framework for decision-making will determine the effectiveness of the interplay between the national and the EU level. Macroprudential policy at the national level will need to be able to respond to ESRB risk warnings and recommendations, requiring that adequate mandates and powers are established at the national level. Moreover, effectiveness of macroprudential policy across the EU will require that national authorities have the resolve and the incentive to take action, including in response to risk warnings of the ESRB. Finally, strong national mandates and institutions will enhance cooperation with EU institutions in risk analysis and assessment, enabling the ESRB to tap analytical expertise that already exists at the national level. In sum, while strong national frameworks are not sufficient to ensure effective macroprudential policy across the EU, they are a necessary complement to the existing arrangements at the EU level.

47. **Strong mandates are needed at the national level that open up and at the same time constrain discretionary use of powers.** The mandate needs to establish safeguarding systemic stability as the primary objective, but should also include secondary objectives to ensure the policymakers consider trade-offs when macroprudential action has costs as well as benefits. For example, a secondary objective could be to ensure that macroprudential action does not unduly impair the capacity of the system to contribute to balanced growth. The strength of powers needs to be commensurate with the public policy interest in mitigating systemic risk.[16] These powers should include (i) information collection powers; (ii) rulemaking and calibration powers; and (iii) powers to determine the appropriate perimeter of macroprudential action. Mandates and powers should be flanked by strong accountability mechanism that ensure the policymaker is required to explain its action or inaction and can be challenged by the public and elected bodies. [17]

48. **A key challenge in establishing effective macroprudential policy frameworks both at the national and at the EU level is to ensure ability and willingness to act.** The benefits of taking corrective action—reduction in the probability and impact of a financial crisis—are uncertain and long-term, while the costs of taking action, including their impact on the financial industry and the provision of financial services to the economy, are often felt immediately and are highly visible.[18] The gains of macroprudential policies are uncertain and difficult to assess because, in contrast to other policies—such as stabilization policies that aim at affecting a macroeconomic aggregate—macroprudential policies aim at reducing the probability of a tail event—an objective by definition difficult to measure. The costs of macroprudential policies, such as a tightening of prudential requirements, are in contrast more easily quantifiable, because they will affect the financial industry and other sectors

[16] The public policy interest arises because the financial sector provides key services to the real economy.
[17] IMF (2011b) and Nier (2011) offer further discussion of these points. See also Tucker (2011) for an overview of the new arrangements in the U.K.
[18] See IMF (2011b) and Nier (2011).

immediately and more visibly. This, in general, may create a bias in favor of inaction or insufficiently timely and forceful action.[19] [20]

49. **National authorities may have a stronger bias towards inaction than supranational authorities.** Because of the high level of financial integration and interconnectedness in the EU, financial crises originating in individual countries will inevitably affect other EU countries directly or indirectly. National authorities will not internalize such externalities unless their mandate contains an EU dimension. Another reason why national authorities could be prone to inaction is because of lobbying and other political economy pressures at the national level. Such political economy pressures can be particularly strong where supervision is prone to be influenced by an explicit or implicit objective to protect the competitiveness of "national champions". To minimize biases for inaction, national frameworks and mandates should therefore be such that they contain an EU dimension and reinforce the effectiveness of the EU institutions, for example by including a requirement to comply with ESRB recommendations.

50. **In sum, national and supranational mandates need to complement each other.** Because the ESRB has no binding power, nor the capacity to analyze policy-trade-offs that takes full account of national conditions, effective macroprudential policy requires effective arrangements at the national level that increase ability and willingness to act on the part of the macroprudential policymaker. However, since political economy pressures and cross-country externalities may engender greater resistance to act at the national level, the EU dimension is essential. National mandates need to be complemented by guidance provided by the ESRB and should include a requirement to act on ESRB recommendations.

Institutional models in the EU: changes and status quo

51. **Since the crisis, there has been substantial institutional change in a number of countries across the EU (Box 1).** In addition, in a number of other member states change is ongoing or planned. A range of institutional models are being established and differ along four dimensions: (i) the degree of institutional integration between agencies, (ii) the existence of a separate committee or council, (iii) the role of the central bank or the treasury as the leading agency (chair) of the committee, and (iv) whether the committee has strong decision-making powers, including the power to direct the actions of constituent agencies.

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[19] Another difficulty with macroprudential policy is that the decision by the policy-maker to signal growing systemic risk may trigger market speculation and self-fulfilling expectations of a crisis.

[20] Countries' crisis experience may also condition their approach to macroprudential policies. For example, countries that experienced a deep financial crisis—such as the U.K.—are more actively developing their macroprudential toolkit than other countries that did not.

52. **There is a strong and welcome trend towards greater institutional integration between central banks and regulatory agencies.** The move to more strongly integrated models is likely to enhance effectiveness by increasing ability and willingness to act, fostering the flow of information and enabling the establishment of strong powers on the part of decision-making committees.[21] Belgium, Ireland, and the U.K. are key examples to date of countries that have reversed the strong separation between central banks and regulatory agencies that was introduced from the late 1990s in favor of integration between central bank and prudential agency (in the U.K.) or between central bank and the integrated financial regulator (in Belgium and Ireland). The U.K. and Romania are examples of countries were a new macroprudential committee has been or is being set up that is chaired by the central bank and has strong decision-making powers.

53. **In a number of other cases, however, the new macroprudential council is instead chaired by the treasury, rather than the central bank.** Examples include France, Greece, Italy, and Portugal. A risk of a strong role of the Treasury is that this may reduce independence from the political process and willingness to act. A strong role of the treasury tends to be a feature also and perhaps in particular for countries that are characterized by separation between central bank and prudential agency, as prevailing in Denmark, Hungary, Poland and Austria. In these countries, moreover, the role of the council tends to be coordination, often relying on consensus between agencies, as opposed to a decision-making committee that would have strong independent powers or powers to direct its members.

54. **Finally, for a large number of countries a high degree of separation between central bank and regulatory agencies persists.** This could become an obstacle to effective macroprudential policy especially if a council charged with macroprudential policy coordination remains absent from the regulatory framework. Examples here include Estonia, Finland, Germany and Luxembourg in the euro area, Latvia, and Sweden in the larger EU, as well as Iceland and Norway outside of the EU, but inside the European Economic Area.

55. **Overall, recent changes in institutional frameworks are likely to increase effectiveness of macroprudential frameworks, complementing the introduction of the ESRB at EU level.** However, institutional changes appear far from complete in a number of countries and have also tended to reduce independence from the political process in some cases. A strong role of central banks is a key strength of the institutional set-up at the level of the ESRB and should be a guiding principle also for the review of national frameworks going forward.[22]

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[21] See Nier (2009) and Nier (2011)

[22] See IMF (2011b) and Nier (2011) for further discussion of the appropriate roles of the treasury and the central bank in financial regulation.

Box 1. Institutional Models

Model 1—Full integration. This model is characterized by a full institutional integration between the central bank, the prudential regulator and the securities markets regulator. Full institutional integration allows for decision-making along the full range of potential macroprudential tools to be made by a committee that is internal to the organization, such as the central bank's executive board and for such decisions to be fully binding on the respective department. As set out in IMF (2011b), it may be useful for decisions on monetary policy to be made by a separate committee. In Europe, the Czech Republic has long been the only example of the fully integrated model. More recently Ireland moved to a fully integrated model and abandoned the strong separation between central bank and integrated financial regulator that characterized its former model. Belgium is planning to move to full integration between central bank and integrated regulator in 2011, in the process dismantling its macroprudential coordinating council.

Model 2—Partial integration. This model is characterized by strong institutional integration between the central bank and the prudential regulator, with the latter a department or subsidiary of the central bank, and a securities markets authority that is separate from the central bank. This model is widespread in Europe, but there are differences in the way macroprudential decisions are taken. Under one variant of the model (2a), the Governor of the central bank chairs a committee that brings together central bank officials, including the head of prudential regulation and supervision, and the head of the separate securities markets authority. Under a second variant (2b), macroprudential policy is conducted by a committee that again brings together the central bank and the separate securities market regulator, but the committee is chaired by the Treasury. Under a third variant (2c) coordination between the central bank and its prudential department and the separate securities market authority is more informal and there is no dedicated macroprudential committee that spans all three agencies. The U.K. is moving to a model where the macroprudential committee is chaired by the central bank (2a) as is already the case in Romania. Change in the U.K. will also reintroduce close institutional integration between central bank and prudential agency, by the setting up of a new prudential agency as a subsidiary of the central bank. In a number of other countries, including France, Greece Italy, and Portugal the starting point has been integration between central bank and the prudential agency, and this is now being complemented by new macroprudential councils that bind in the securities regulators, but are chaired by the Treasury (2b). A number of other countries, such as the Netherlands have not (yet) introduced a dedicated macroprudential committee or council (2c), and rely instead on strong institutional integration between central bank and prudential regulator as a coordinating device.

Model 3—Separation. In this model there is separation between the central bank and both the prudential regulator and the securities market regulator, with the latter two sometimes integrated to form one integrated regulator. Macroprudential policy coordination that involves the central bank then has to rely on inter-agency coordination that can be facilitated by a council. However, under separation it tends to be difficult to square strong powers to direct with the operational autonomy of each participating institution. Separation therefore favors decision-making by consensus and while a council may issue recommendations, such recommendations will under separation tend to be non-binding on constituent agencies. In practice, in addition, separation may favor a strong role of the treasury, so as to mediate between differences of view between constituent agencies. Consistent with this, In Europe there is no example to date of the separated model in which the macroprudential council is chaired by the central bank (3a). Hungary and Poland have recently set up a council that is chaired by the treasury (3b), as is the case also in Denmark and Austria. Finally, in a number of countries, there is no formal macroprudential council and coordination between central bank and regulatory agencies is more informal (3c). Examples here include Estonia, Finland, Germany, and Luxembourg in the euro area, Latvia, and Sweden in the larger EU, as well as Iceland and Norway outside of the EU, but inside the European Economic Area.

Lack of powers at national level

56. **Lack of powers to use macroprudential instruments at national level could become a further important obstacle to effective macroprudential policy in the EU.** The need to constrain a dynamically evolving financial system requires powers to act, including the power to choose the appropriate tool in any given conjuncture and to calibrate those tools to the prevailing level of systemic risk. National authorities need also to have the ability to respond swiftly to ESRB recommendations, by employing appropriate macroprudential instruments to reduce the build-up of vulnerabilities.

57. **There is considerable heterogeneity across the EU as regards the independent ability of regulatory agencies to introduce new regulations or to recalibrate existing regulations without a change in law.** In a number of countries, such as Sweden and Romania the regulatory agency has strong independent powers to set financial regulations, without such regulatory acts requiring the consent of the treasury or parliament. In a number of other countries the rulemaking power of the regulatory agency is more constrained, often requiring consultation with or approval of the treasury, as in Finland, Germany, and the Netherlands, or in some cases even a parliamentary act.

58. **This underscores the need for regulatory authorities across the EU to be empowered to use and calibrate macroprudential tools in a manner that is independent of the political process.** Such powers on the part of the regulatory authorities need to be guided by a mandate that opens up as well as constrains the discretionary use of macroprudential tools and should be flanked by appropriate accountability mechanisms.[23]

D. The Macroprudential Policy Toolkit

59. **In this section of the paper, we examine which macroprudential tools should be established at the national level.** In the context of the EU this issue has two important dimensions. First, tools that are established at national level should be effective and comprehensive, enabling the authorities to respond effectively to the build-up of systemic risk. Second, it is desirable that there are common sets of tools, shared by all member states, so that mitigation of systemic risk can be coordinated through the ESRB and regulatory arbitrage avoided.

60. **We first briefly outline principles that should guide the choice of the EU macroprudential policy toolkit.** Second, we summarize the findings of the IMF survey of macroprudential policies performed by the Monetary and Capital Market department of the IMF. We argue that the macroprudential toolkits considered by national authorities according

[23] See IMF (2011b) and Nier (2011) for further discussion.

to this survey are unlikely to be sufficient to address a range of possible systemic risks. We next suggest additional instruments that should be included in the macroprudential toolkit.

Choice and use of macroprudential instruments: normative considerations

61. **Most instruments that have been used so far are prudential instruments recalibrated for macroprudential purposes.** Most experiences with macroprudential instruments in the EU were in Central and Eastern European countries, where instruments included enhanced capital requirements and increases in reserve requirements. Examples of use of macroprudential instruments in more mature economies are the introduction of dynamic provisions in Spain in the early 2000, and limits on LTV more recently introduced in Sweden.

62. **Macroprudential instruments are needed to address two distinct dimensions of systemic risk.** They need to mitigate systemic risks arising from the tendency of the system to become overexposed to aggregate or correlated risks over time (such as aggregate or sectoral credit imbalances, asset price bubbles and balance sheet mismatches) and those arising from the systemic impact of the failure of individual institutions (such as amplification and contagion effects arising because of interconnectedness, fire sales or confidence effects).[24]

63. **Experience has shown that financial crisis have various sources and channels of transmission or amplification.** The current crisis in the euro area is the consequence of real estate bubbles and sovereign risks; the 2008 financial crisis in the United States was exacerbated by weak underwriting standards at origination in the U.S. real estate market and of failures in the securitization process; the Asian crisis of the 1990s was mainly caused by balance sheet maturity mismatches in the corporate sectors, with high reliance on short-term debt supplied by merchant banks to finance long-term investments; emerging markets (Korea) also experienced episodes of financial stress resulting from the rapid expansion of consumer credit through banks and non-bank financial intermediaries.

64. **Macroprudential toolkits should include a carefully selected set of instruments sufficient to address most foreseeable sources of systemic risks.** The often cited principle according to which instruments should be linked to objectives does not imply that macroprudential policy should rely on only one instrument. Because systemic risk has multiple dimensions and can arise through various institutions, markets, and sectors, the macroprudential policy toolkit must contain sufficient instruments to mitigate risks through each likely channels of systemic risk build-up. By contrast, a too restrictive set of instruments may not allow the policymaker to target new channels of build-up of systemic risks.

[24] See for example Borio (2009), Nier (2009), and Nier (2011).

65. **Another argument in favor of the establishment of a range of instruments is that there is, so far, very limited knowledge about which instruments are effective, and which ones are not.** Moreover, experience has shown that to be effective a range of complementary instruments may need to be brought to use when the build-up of systemic risk is fuelled by strong underlying forces that cause each individual instrument to be subject to arbitrage (see for instance Crowe and others, 2011). This also requires that instruments should be broad in scope, rather than applied only to particular institutions, which could result in arbitrage or miss addressing the proper channels of systemic risks.

66. **Individual macroprudential instruments belonging to the toolkit should be chosen based on several key characteristics.** First and foremost, it is essential that instruments are effective in limiting the build-up of systemic risk and help increase resilience while minimizing dead-weight costs on the industry or to the provision of credit to the economy. Another key dimension in the EU is that macroprudential instruments should be designed and applied to limit opportunities for regulatory arbitrage. To protect the fabric of the single market, reciprocity of macroprudential policies will need to play a crucial role. Finally, clarity and simplicity in the use and calibration of instrument may be needed to ensure that clear signals are sent to market participants.

Developing the EU macroprudential toolkit

67. **The survey conducted at the end of 2010 by the Monetary and Capital Market Department of the IMF asked each Member State their views on the set of instruments that should belong to their macroprudential policy toolkits.** A list of 30 instruments was suggested in the questionnaire, but the questionnaire also allowed countries to add other instruments.

68. **The instruments that were mentioned in the questionnaire can be classified in the following categories:** (i) instruments targeting the asset side of banks; (ii) instruments targeting asset-liability mismatches; (iii) capital measures; (iv) measures targeting SIFIs; (v) measures focused on the funding of banks; (vi) measures affecting the functioning of markets; and (vii) other measures (such as tax policy).

69. **Respondents favor a small set of measures on which there is already an emerging international consensus.** There is a clear consensus on capital measures, such as the countercyclical capital buffer agreed upon in Basel III, dynamic provisioning, and capital conservation measures also included in Basel III (such as restrictions on the distribution of profits). A large majority of countries favor imposing limits on loan-to-value ratios and loan-to-income ratios. A capital surcharge for SIFIs and limits on maturity mismatches also emerges as measures that would be considered by a majority of countries.

Table III. 1. Macroprudential Instruments Selected by European Countries (Part I)

	Assets measures					Asset/liability measures			Capital measures		
Country	Caps on loan-to-value ratios	Caps on debt/loan-to-income ratios	Limits on exposures or concentration	Caps on foreign currency lending	Ceiling on credit or credit growth, incl by sector	Limits on net open currency positions/ currency mismatch	Limits on maturity mismatch	Reserve requirement	Countercyclical capital requirement	Dynamic provisioning	Restrictions on profit distribution
euro area	8	6	5	1	2	2	7	2	7	7	7
Other EU	5	2	2	2	1	4		2	3	3	3
EEA	1	1					1		1	1	1
All	**14**	**9**	7	3	3	6	**8**	4	**11**	**11**	**11**

Note: 15 countries included: Austria, Belgium, Finland, France, Greece, Italy, Netherlands, Portugal, Spain, Sweden, Norway, Poland, Hungary, Bulgaria, and Romania

70. **There is, surprisingly, more limited support for macroprudential measures addressing other dimensions of macroprudential risks.** Few respondents mentioned measures targeting the funding structure of financial intermediaries, in particular the reliance on wholesale funding—such as a levy on wholesale funding, a (time varying) liquidity coverage ratio, or liquidity surcharges for systemically important institutions.[25] Measures targeted at the functioning of securities market, such as limits on haircuts or on collateral margins, were also only selected by a few countries. Other types of measures (addressing non-real estate sectors, or the functioning of the interbank market, or fiscal measures) appear to have less or almost no support among the group of respondents.

Table III.2. Macroprudential Instruments Selected by European Countries (Part II)

	SIFIs		Funding			Markets		Fiscal
Country	Size dependent leverage limit	Capital surcharge	core funding ratio	levy on wholesale funding	time varying liquidity coverage ratio	haircut or margin on collateral	CCP for derivatives	Sector specific taxes
euro area	1	7	4		2	4	1	2
Other EU	1	1	2	1	1	2		2
EEA		1			1			1
All	2	**9**	6	1	4	6	1	5

71. **While the choices of respondents fully reflect the growing international consensus, completing this small set with additional instruments would be justified,** for two main reasons. First, as discussed earlier, there remains a lot of uncertainty over each instrument's effectiveness. Hence, enlarging the set of instruments admitted to the

[25] Both levies on wholesale funding and quantitative liquidity ratios act as "automatic stabilizers" mitigating the cross-sectional dimension of systemic risk and potentially reducing the need to readjust these measures in a countercyclical fashion.

macroprudential toolkit would limit the likelihood that macroprudential instruments might turn out to be ineffective when needed. Second, some instrument may be suited only for specific sources or for specific channels of transmission of systemic risk, and are unlikely to be useful in mitigating other sources of systemic risks, as highlighted in the previous section.

72. **The most popular instruments so far are not without their limitations.**

- While broad in scope, the countercyclical capital buffer may suffer from some a number of limitations. First, in the Basel III framework, there will be long lags (up to one year) between the announcement of capital add-ons by national supervisors and its implementation. Second, the deviation of the credit-to-GDP ratio from its trend—used as an indicator to calibrate the buffer—is an imperfect indicator of the macrofinancial cycle. Third, during downturns, the decision to release the buffer by the *macroprudential* supervisor may be inconsistent with the *microprudential principle* under which banks should not deplete capital when non-performing assets are building up. Finally, the capital buffer is a blunt tool: when the build-up of imbalances is concentrated in particular sectors this could lead to a crisis well before the buffer is triggered by aggregate developments.[26]

- The second most popular measure, a contingent upper bound on loan-to-value ratios, potentially completed by an upper limit on the debt-to-income ratio to ensure ability to repay, seems to be emerging as an effective instrument; but the experience so far suggests that implementation could be challenging, as there are risks of regulatory arbitrage, through both non-bank and cross-border lending. Moreover, to be effective, coverage must be comprehensive including by covering second-lien mortgages (Crowe and others, 2011). Its benefits in terms of buffers and mitigation of strategic defaults may also differ across countries, according to characteristics of the mortgage market (including, for example, whether mortgages are full recourse or not). Finally, relaxing the LTV limit in a downturn may also create conflicts between the macroprudential and the microprudential perspectives. From a macro perspective, it may be optimal to raise limits on loan-to-value ratios to support the real estate market during a crisis. But such a policy may increase the credit risk of individual financial institutions, and may not be optimal from a micro-prudential perspective.

73. **The set of instruments emerging from the international consensus appears too focused on taming broad-based credit booms and real estate bubbles, and not sufficiently aware of other specific channels and sources of risks.** The macroprudential

[26] The impact on credit supply will depend on the speed at which the buffer is built-up. A fast build-up will presumably be more effective in constraining credit supply, in particular if banks have to resort to costly issuance of equity.

toolkit of EU countries should therefore go beyond this set and consider including additional instruments targeting:

a. *Time varying exposures to specific sectors. Time and sectoral contingent risk weights* would usefully complement the countercyclical capital buffer for two reasons.[27] First, they would allow to target more specifically the sectors where systemic risk is developing, thus allowing a cross-sectional differentiation of risks. Second, in contrast to broad-based measures, such as the countercyclical capital buffer, sectoral measures would more easily identify the build-up of sectoral vulnerabilities that may not be well captured by the private credit to GDP ratio. Examples of such measures would include contingent risk weights on interbank lending, lending to sovereigns, corporates, or households.[28]

b. *Funding of financial intermediaries.* Balance sheet expansions during the boom were financed by relying on wholesale funding, often of a short-term nature. A possible instrument, in addition to the two quantitative liquidity constraints included in Basel III, would be a *contingent levy on non-core funding* (as currently introduced in Korea) which would help address both the time dimension and the cross-sectional dimension of systemic risk.

c. *Collateralized lending markets.* A possible instrument *would be contingent margins or valuation haircuts* on existing securities used as collateral in the securitized lending markets (such as for repos). This instrument would be used to regulate the supply of secured funding which would help reduce the risks of fire sales. It would also affect the contribution of the shadow banking system to pro-cyclicality by affecting their funding conditions in wholesale markets. Ideally, strong margining should be extended to OTC markets to incentivize the move to central clearing of derivatives.

E. The Role of the ESRB in a Financially Integrated EU

The role of the ESRB in the design and use of macroprudential tools across the EU

74. **Because of the integration of financial systems among EU countries, effective national mandates and tools are necessary but not sufficient to ensure effective macroprudential oversight across the EU.** They are necessary because without these

[27] Some of these measures would generalize microprudential exposures limits that are *not* time varying.

[28] Optimal risk weights may differ from a microprudential perspective than from a macroprudential one. For example, collateralized short-term assets (such as reverse repo transactions) may appear safe from a microprudential perspective, and therefore attract low capital requirements. But they could be systemically important as decisions not to roll-over the transaction may trigger fire sales of assets by the counterparty of the transaction, which may amplify financial crisis (Morris and Shin, 2008).

national elements there can be no effective macroprudential action for the EU as a whole. But a pure national approach is not sufficient in a highly financially integrated region where capital should continue to flow freely across borders. First, decisions to act need to have a EU dimension to overcome cross-country externalities and the risks of regulatory capture at the national level. Second, strong coordination of policy actions at the EU level is needed to avoid regulatory arbitrage by financial institutions that are located outside of the country setting macroprudential policies. The ESRB therefore has a strong role to play in ensuring effective macroprudential oversight for the region as a whole.

75. **The ESRB should warn that a *minimum* set of macroprudential instruments *common* to all Member States needs to be established EU-wide.** This approach would ensure that each Member States is able to act in response to rising systemic risks, and that all Member States can adopt common responses to similar risks. The ESRB advice on the harmonization and use of macroprudential policy toolkits should result in recommendations addressed to the Commission for specific EU Directives, to ensure that macroprudential policy is operational in all Member States.

76. **The ESRB should also make recommendations on the *calibration* of individual macroprudential instruments across all EU countries.** This will ensure that the calibration is adequate to the risk identified. In particular, the instrument should be calibrated in a way that mitigates risks effectively—without imposing undue costs on the financial sector—and that all national macroprudential authorities adopt similar quantitative responses to systemic risks. The ESRB could also warn that some practices (such as LTVs at or above 100 percent) are excessively risky and should therefore be prohibited. In some cases the ESRB should give advice as to whether a particular instrument can be implemented by way of a policy rule or whether a discretionary overlay is needed. The ESRB can also issue recommendations on what additional elements need to be considered in the discretionary use of tools. If needed, the ESRB could also issue guidance on the *combination of instruments* that could more effectively help reduce systemic risks.

77. **The ESRB should play a key role in facilitating the effectiveness of macroprudential policy across the EU by *ensuring reciprocity across EU countries*, so as to reduce the scope for regulatory arbitrage.**[29] To avoid regulatory arbitrage and ensure effectiveness of macroprudential action across the EU, a mechanism is needed whereby home country authorities reciprocate the macroprudential measures put in place by host countries, based on the exposures of the consolidated national financial institutions to the

[29] The experience of Central and Eastern European countries proved that measures taken by host countries can be evaded through cross-border lending, lending through branches or non-bank financial intermediaries that are not within the regulatory perimeter of the host country.

asset class of the host country considered.[30] The ESRB should, if it is satisfied that the macroprudential action taken by the host authority is justified, issue a recommendation to other macroprudential authorities to reciprocate the measures taken by the host authority.

78. **The ESRB could finally *sanction* the decisions of Member States to set or modify macroprudential instruments in particular when these decisions interrelate with EU standards.[31]** For example, under the forthcoming capital requirements directive (CRD IV), member states will require flexibility in the variation of risk-weights for macroprudential purposes. A potential solution may be for such use of risk-weights to be validated by the ESRB, with the exception then formally granted by the Commission. To minimize the burden on the ESRB, such validation process could be designed to be as rule-based as possible.

The need for the ESRB to work with other EU bodies

79. **The ESRB will need to work closely with the European Supervisory Authorities.** Successful interaction between the ESRB and the ESAs will be important to ensure a proper meshing of macroprudential and microprudential instruments and risk assessments. Strong cooperation is needed also in the exchange of data and information. As noted in the EFFE report, the current regulations stipulate that requests for detailed data from the ESAs will have to be ad hoc and motivated, and it does not provide a dispute settlement mechanism, which could become problematic in practice

80. **The ESRB also depends on the ECB for analytical, statistical, logistical and administrative support.** Close collaboration between the two institutions will remain essential in the future. However, since the ESRB is an EU institution covering non-euro area countries, there may be a need to also strengthen its analytical resources in the medium-term, independently of the analytical contribution of the ECB.

81. **Finally, the ESRB will also need to work closely with the EU Commission.** The ESRB needs to warn when legislative action on the part of the Commission unduly constrains macroprudential policy action. And it should recommend that the Commission takes positive legislative action to ensure that common macroprudential toolkits will be available to policymakers across the EU. The ESRB will also have a role to play in the assessment of macroeconomic imbalances that will be performed by the EU Commission under the External Imbalance Procedure. It should use its recommendations to sharpen financial sector advice given in that process.

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[30] For example, an asset class would be defined as sovereign bonds of country A, or mortgages on properties of country B.

[31] More generally, countries may occasionally have an interest in obtaining a validation of their national macroprudential policies by the ESRB, for example to overcome opposition on the part of the financial industry.

F. Conclusion

82. **Under the current framework, the effectiveness of the ESRB will strongly depend on successful interaction with other EU institutions and with national authorities.** Collaborations with other EU institutions have already been initiated; for example, the ESRB and ESAs are already setting up protocols for information sharing and guidelines and processes for handling data requests should be initiated. The ESRB together with the EBA also actively participates in rulemaking to transpose Basel III countercyclical capital buffer into the EU law. It has expressed clear views on the need for some flexibility in the CRDIV to accommodate macroprudential policy across the EU.

83. **National macroprudential oversight arrangements will be important elements of the overall EU framework.** They will affect the ability and willingness to make use of national information and analytical capacity as inputs in the ESRB's analysis. They will also shape the follow-up on ESRB risk warnings and recommendations. But the role of the ESRB will remain crucial, because of the high degree of financial integration within the EU and the resulting scope for cross-country externalities and spillovers. Because the ESRB has no binding powers under the current framework, national mandates should explicitly include a requirement to act on ESRB recommendations.

84. **To ensure effective follow-up on ESRB recommendations, EU countries will also have to have common macroprudential instrument toolkits in place.** Hence, agreement has to be reached at the EU level on a selective harmonized toolset to be established EU-wide. The toolset should be broad enough to provide the capacity to address various potential sources as well as channels of transmission and amplification of systemic risk. The ESRB should use its mandate to take the lead in harmonizing macroprudential toolkits across EU countries. The ESRB should make recommendations to the EU Commission to use its law making power to introduce a common set of macroprudential instruments, and to ensure that an appropriate degree of flexibility for use of macroprudential tools will be embedded in the CRDIV. To safeguard the single rule book, it should also ensure adequacy and consistency of application, including reciprocal use of instruments across the EU.

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IV. STRENGTHENING GOVERNANCE IN THE EURO AREA[32]

A. Introduction

85. **The crisis has questioned the viability of the euro area in its current shape.** Skeptics stressing its fragility because of the lack of fiscal union, inadequate market flexibility, and low level of labor mobility, now feel vindicated. There is no doubt that a fully-fledged federal system as in the U.S. would have helped to prevent some distinctive features of the crisis in the euro area (e.g. disproportionate state-level debts), allow smoother resolution of financial-system problems, and more generally, offer less scope for policymakers to confuse markets with conflicting commentaries. Yet, is this a definitive proof that the euro is not viable without a federalist fiscal architecture?

86. **To address this question, this paper frames the various aspects of crisis prevention and management in the light of fiscal federalism**. Strictly speaking fiscal federalism refers to the conduct of fiscal operations at federal and regional levels with a three-fold function: redistribution (permanent transfers from richer to poorer regions), stabilization (counter-cyclical federal fiscal policy when all regions are hit by a common shock), and risk-sharing (temporary transfers when selected regions are hit by a region-specific shock). The U.S. is the quintessential example of a fiscal union, while the EU, where certain functions such as agricultural and cohesion policy, can only be regarded as a soft form of fiscal federalism, which in any case does not coincide with the currency union. Differences between the two regions are even larger if the notion of fiscal federalism is extended to reflect the degree of cross-border economic activity and resolution mechanisms.

87. **European economic governance is currently under debate but the large number of proposals on the table simply seek strengthened coordination.** Is this a problem? We argue that this need not be a problem provided that solutions put forward work in practice. But a major overhaul is clearly needed.

88. **The paper is structured as follows.** Section B compares the euro area and the U.S. economic systems, with a focus on fiscal aspects. Section C assesses current crisis prevention and management proposed reforms. Section D concludes.

[32] Prepared by Esther Perez Ruiz.

B. Economic Systems in the EU and the U.S.: A Brief Comparison[33]

89. **This section compares the EU and U.S. fiscal and economic salient features, with a focus on fiscal federalism.** One way to compare fiscal capacity in the two regions is to quantify the centralization of revenues and the distribution of expenditures by the U.S. federal government and the EU budget (Figure IV.1). Note that this is not an entirely fair comparison as the EU is distinct from the euro area, so the fiscal transfer space does not coincide with the monetary union and there are no specific transfer provisions for members of the euro area. Nonetheless, it is instructive to look at the differences between the EU and the U.S. In the U.S., federal taxes collected from the states range from 12 to 20 percent of state GDP, and federal transfers received by states range from 9 to 31 percent of state GDP. In contrast, most EU countries contribute to the common budget by about 0.8 to 0.9 percent of their GDP, and receive EU funds amounting to 0.5 to 3.5 percent of their GDP. As a result, fiscal redistribution is much more sizable in the U.S. and the relationship between redistribution and the level of development (as measured by GDP per capita) is also much stronger in the U.S.

90. **While important, differences in fiscal centralization alone cannot explain why only the continuity of the euro area has been challenged so far.** Institutional features, such as fiscal rules, the scope for local debt, the conduct of fiscal stabilization, the strength of the banking system and the extent of market flexibility also matter. We compare the two regions in those areas that can help prevent and manage crises in regions/states participating in a supranational entity:

- ✓ *Fiscal rules in the U.S. tend to be more stringent than in the euro area* leaving less potential for irresponsible behavior. Most U.S. states have Balanced Budget Requirements (BBRs) in their constitutions, which can be interpreted as a response of the states to a credibly established no bailout by the federal government of defaulting states (Laubach, 2005). Snell (2004) concluded that 36 states have rigorous BBRs (effectively disciplining local fiscal policies), 4 have weak requirements, and the other 10 fall in between those categories.

- ✓ *The scope for local debt is less in the U.S.:* given the higher share of centralization of revenues and expenditures and the fact that state fiscal rules are generally strict, state spending does not have the potential to lead to massive debt/GDP ratios. To illustrate, the combined debt of US states and local governments amounted to about 22 percent of U.S. GDP in 2010, with limited cross-state divergence (ranging from 9.3 percent in Wyoming to 33 percent in Rhode Island). In contrast, the euro area debt-to-GDP ratio amounted to

[33] This section heavily relies on Darvas (2010).

85 percent of GDP in 2010 (ranging from 18 percent in Luxembourg to 142 percent in Greece).

- ✓ *The superiority of fiscal stabilization in the U.S. cannot be established:* During the crisis the US federal government allowed automatic stabilizers to run and adopted a major discretionary stimulus including direct help to state budgets. In the EU, counter-cyclical policies were left to each member state with some attempt of coordination from the center. However, both in the euro area and the U.S. there are states that had to deal with pro-cyclical fiscal policy at some point during the crisis and states that could benefit from counter-cyclical fiscal policy (Darvas, 2010). Focusing on the pre-EMU period, Fatas (1998) also concluded that the benefits in terms of fiscal stabilization were not sizable enough to compensate the costs of creating a fully-fledged European fiscal federation.

- ✓ *Strength of the banking system:* measures implemented to date to reinforce the banking system seem to have been more effective in the U.S. Alongside with fiscal functions, banking regulation and supervision are also centralized in the U.S., and fixing the financial system is easier because cross-(state-)border banking is not inhibited. The fragmentation and fragility of the euro-area banking industry is a major reason why the crises in current program countries threaten the EMU project.

- ✓ *Labor and product market flexibility:* the empirical literature proving the U.S. much closer to an Optimum Currency Area (OCA) than the EU is voluminous. Cross-border mobility of companies and labor is clearly superior in the U.S.

- ✓ *Significant similarities exist between the two areas as to the formal crisis resolution mechanisms:* Prior to the crisis, there were no bail-out or short-term financial mechanisms in the euro area or the U.S. Neither an orderly default mechanism was previewed.

Overall, although the two regions have some similarities in terms of the damage potential of the state-level problems, the comparison with the U.S. suggests that a more federalist fiscal and economic union would most likely have reduced the vulnerability of the euro area to crises, accelerated the strengthening of the banking system, increased the political coherence of the euro area and boosted confidence.

C. Bolstering Economic Integration in the Euro Area

91. **Solutions to euro area problems can be tailored to its needs.** Since the euro area has a different political setup than the U.S., the level of government debt is very diverse across countries, and the establishment of fiscal transfers as sizable as in the U.S. would

surely generate further tensions and antagonism between creditor and debtor countries, European solutions need not follow the U.S. model. How can the euro area governance be put on a solid footing? To what extent do the current governance proposals give the euro area some attributes of a political union? How do they contribute to enhance stabilization, redistribution and risk sharing?

Macroeconomic stabilization and discipline: enhancing the scrutiny of imbalances

92. **With the monetary instrument lost, fiscal policy becomes the main countercyclical instrument in the euro area.** However, fiscal polices have been mostly pro-cyclical before and during the EMU years (Fatas and Mihov, 2009). More responsible fiscal policies would have reduced the scope for crises by limiting pre-crisis debt levels. But this does not necessarily require a fiscal federation: a larger role for fiscal stabilization in the euro area can be achieved through counter-cyclical country-level fiscal rules. Most U.S. states have constitutional fiscal rules—and the same approach has also been adopted recently by Germany. Other euro-area members may also choose this approach, possibly augmented by the introduction of independent fiscal councils (Calmfors and others, 2010).

93. **By capping the expenditure-to-GDP ratio, the revamped SGP (Tables IV.1 and IV.2) aims to contain pro-cyclical fiscal policies.** Fiscal discipline will also be improved by strengthening enforcement (including quicker and semi-automatic sanctions) and making the debt criterion operational (placing under Excessive Deficit Procedure, or EDP, countries with debt levels above the 60 percent limit and reducing indebtedness at a yearly pace lower than $1/20^{th}$ of the distance from that benchmark). Taking into account implicit liabilities will require a country with an oversized banking sector to factor in potential rescue costs. All this is encouraging. However, the effectiveness of fiscal surveillance could be substantially improved by introducing legal provisions requiring the correction of past upward drifts in public expenditure; calibrating more ambitious and country differentiated medium term objectives (MTOs) to realistically face sustainability challenges posed by the crisis and aging populations; initiating EDPs by reverse qualified majority whereby Commission's recommendation prevails unless the Council decides otherwise by QM*;* restricting sanction waivers; and tightening legal deadlines for corrective action.

94. **But macroeconomic stabilization is not only about fiscal policy and not all crises are rooted in a lack of budgetary discipline.** As fiscal excesses may be neither the only nor the most important source of macroeconomic imbalances, the new Excessive Imbalances Procedure (EIP) is a necessary complement to the revised SGP. Imbalances can be of two kinds, internal (if prompted by irresponsible fiscal behavior, credit excesses in the private sector and asset bubbles) and external (if rooted in competitiveness deficiencies), both affecting the current account balance and international investment positions. The EIP comprises a *preventive* arm, identifying imbalances and triggering, as needed, in-depth analyses about their underlying causes. For countries suffering from *excessive* imbalances and put under the EIP, the *corrective* arm will require the adoption of adequate fiscal,

structural and macro-prudential remedies. Current proposals helpfully identify general objectives, but to be effective, EIP regulations will have to define limit thresholds for key indicators, introduce more binding deadlines, and use reverse qualified majority voting in all relevant steps. The list of minimum amendments to make the new procedure work includes:

- *Establishing well-defined benchmarks in the EIP regulation.* The absence of indicators and reference thresholds in the regulation introduces legal uncertainty especially at the initiation of the EIP. Such legal vacuum is at odds with SGP regulations, which specify benchmarks the deviation from which makes a strong case for activating EDPs. At the very minimum, EIP rules should clearly spell out thresholds for current account balances and international investment positions, given their comprehensive character. The remaining indicators (e.g. competitiveness, credit indicators) could play a complementary role and be the object of a separate Code of Conduct.
- *Facilitating decision making.* Relevant EIP decisions (other than the imposition of sanctions) should be taken by reverse qualified majority, most importantly the initiation of EIPs.
- *Tightening deadlines.* As the EIP involves many steps, the process is likely to be lengthy and uncertain unless binding deadlines are foreseen. Maximum spells within consecutive steps should be specified along the procedure and an overall time length of one year (starting from the initiation of the EIP until the final closure/imposition of sanctions) could be set.

Higher public and private risk-sharing

95. **One important advantage of federal systems is that they create risk-sharing opportunities by pooling the debt of participating states.** A euro area bond would play a similar role in the euro area. There would be common issuance to which countries have conditional access (either up to a level, or under some other strict, measurable conditions). Safeguards should produce the right incentives to prevent countries from massively issuing bonds and promote fiscal discipline more powerfully than the SGP or any other fiscal coordination proposal.

96. **Euro area bonds would reduce the cost of debt of most member states (and eventually of all of them) through a much larger market size, depth, liquidity and diversification.** This would place them on a par with the U.S. Treasury bonds, reinforcing the euro as a major reserve currency. Lower cost of debt and the attractiveness of this market for large investors would also help achieve more sustainable debt levels and higher economic growth potential.

97. **Another important gap to fill between the euro area and a federal system as the U.S. is financial supervision and crisis resolution.** By neglecting the problem of systemic risk, micro-prudential regulation has failed to maintain financial stability. As a result, many

European countries have had to provide bailouts. Government interventions have in turn reduced cross-border lending, limiting the scope for risk diversification and financial stability. Both a macro-prudential approach to regulation and a euro area wide burden-sharing mechanism are needed to foster private risk-sharing, as is the removal of financial protectionism. And all these institutional changes should be feasible without creating a U.S.-style federal fiscal system.

Making the most of current redistribution efforts

98. **Although modest compared with the U.S., Europe's redistribution policy, embodied in the Common Agricultural Policy and the Cohesion Policy, features the highest degree of fiscal federalism at the EU level.** Rather than discussing the optimal level of redistribution, a very contentious issue, it is important to note that the low level of intra-EU redistribution has not caused the current crisis: it is ironic that precisely Greece was the highest net beneficiary prior to the crisis, receiving much more than what the relationship between net balance with the EU and GDP per capita would suggest.

99. **The EU earmarks a total of about 348 billion euros under the heading Structural and Cohesion Funds (SCF) over 2007–13.** This is equal to 2.8 of the EU GDP or 0.4 percent of per year on average. It is usually claimed that EU funds are not as powerful an instrument for resource allocation as in the U.S. Yet, EU support for cohesion represents a significant amount when compared, for example, with the size of the rescue packages to Greece (110 billion euros) and to Ireland (85 billion euros). And Marshall Plan aid from 1948-51 was only about 2 percent of the GDP of all recipient countries, but made a substantial contribution to western European growth.

100. **Moreover, some EU countries have large amounts of usable SCF.** As a matter of fact, funds are only partially slowly absorbed and countries lose the funds that are still unused two years after they have been allocated. For instance, in Portugal and Greece unused funds respectively amount to 9.3 and 7 percent of GDP (Marzinotto, 2010). Accelerating the absorption rate of EU funds and further exploiting synergies between EU grants and EIB loans are two commendable objectives of adjustment programs in crisis-hit countries.

Enhancing market adjustment

101. **Measures to move the whole euro area, including its labor market, towards an OCA, are of the utmost importance.** It is now 20 years since the Single Market Program was launched with the goal of eliminating barriers to the movement of goods, services, capital and workers. Despite substantial progress over this period, especially in financial markets, the integration of product markets appears to have stalled, and labor remains largely fragmented.

102. **Labor mobility in the EU remains relatively low, despite the legal right to work anywhere in the EU.** One longstanding reason inhibiting mobility is the large differences in tax, social insurance and pension systems across the EU. There is ample evidence that differences in implicit tax rates on income substantially distort mobility (Fenge and Von Weizsacker, 2008, Wasmer and Janiak, 2008). Further reducing mobility distortions—not only for pensions but also for other parts of European welfare states—would be desirable.

103. **Completing the agenda of the Single Market initiated in the mid-1980s, the Services Directive called for the removal of unjustified obstacles to market entry in the provision of services.** However, given the abstract nature of its principles and its broad coverage, countries have practically kept a broad scope of freedom for its implementation and its impact has been generally disappointing. Moreover, the need to analyze regulations on an individual basis in order to verify their compatibility with the directive ("screening of legislation") has made the transposition a very lengthy process and delayed its economic benefits.

Higher intrusion in domestic policies: who oversees non-compliance?

104. **One common feature of the manifold processes described so far is that they keep intact national sovereignty.** As such, the proposed governance package continues to belong to the category of inter-governmental projects subject to inter-governmental coordination. In essence, the *de jure* institutional structure of the region will be left broadly unchanged after these reforms and the control of fiscal, macro-prudential and structural policies will remain in the hands of national governments. The only hope for the reforms to make a difference with the status quo is that, this time, coordination and peer pressure will work. But will they really?

105. **An attempt to complement coordination procedures with a certain dose of political commitment is represented by the Euro Plus Pact.** Meant to bolster economic integration over and above Treaty commitments, the Pact (agreed upon by euro area leaders in March) was initially perceived as a valuable political addition to the governance package. However, in reality, the Pact contains a list of desirable cross-cutting goals for tighter coordination on the competitiveness, employment, fiscal and financial fronts, but no tangible means to implement them beyond current procedures. To help the euro area grow out of the crisis, the Pact should take a decisive turn towards commitments which are time-bound, ambitious in terms of objectives and concrete regarding their design.

106. **The alternative to more governmental coordination is to transfer some national sovereignty to a supranational entity.** This would mean that although national authorities would retain in principle the control over fiscal, macro-prudential and structural policies, some delegation of political power to the center is also allowed if a country fails to comply with euro area rules. A first step towards increasing the degree of supra-nationality would be

to vest euro area authorities with powers to override national policies if those conflict with the common interest (Trichet, 2011). This would imply shared competence over economic matters, but only for sovereigns failing to abide by the region's rules. In any case, in a highly interconnected region as the euro area national sovereignty is de facto more of an illusion than a reality.

D. Conclusion

107. **Euro area governance needs to go through an ambitious reform.** While the origin of the euro-area fiscal crisis is not the lack of a federal institutional setup with higher redistribution, stabilization and risk-sharing roles, a more federal approach would likely have dampened the contagion of state-level problems within the region, accelerated its resolution and enhanced political coherence overall.

108. **While improvements compared to the status quo, current government proposals fall short of what is needed to support the integrity of the euro area.** The new policy framework looks somewhat unclear, with no less than three different, partially overlapping, European procedures—for budgets, macroeconomic imbalances and macro-financial stability. This not only calls for a substantial coordination effort across policy areas, but more fundamentally, between the national and supranational authorities. If past is prologue, it is far from certain that inter-governmental agreements will succeed in this huge coordination task, and the Euro Plus Pact seems to be no exception in this respect.

109. **For this reason it is expected that the governance model will be in need of reform soon**. And euro area members will again be confronted with the uncomfortable, though unavoidable, decision on how much national sovereignty to delegate. No doubt curtailing the powers of governments breaking the rules requires a fundamental political move, possibly expanding the notion of national sovereignty with economic considerations, and requiring legal changes both to the Treaty and the Constitutional laws. Enabling the prevalence of European authority over national institutions (where circumstances so advice) needs, above all, a change in mentality, though some progress has to be acknowledged in the area of regulation and supervision. National authorities need to delegate some power to the center for the sake of the common interest. This is quite different from creating coordination institutions at the EU level that overlap, duplicate but that can hardly supersede national authorities.

Table IV.1. Main Changes to the Stability and Growth Pact following the 2011 Reform--Preventive Arm

Current rules	Legislative Proposal
Preventive arm--Principles of fiscal prudency--Limiting risks to public finance sustainability	
* A **MTO** is set for each country to (i) provide a safety margin w.r.t. the 3% of GDP deficit limit; (ii) to accelerate progress towards sustainability. * The MTOs are defined in CAB terms, net of one-off and other temporary measures. * The MTOs for euro area countries are set within the range between -1% of GDP and balance or surplus. * The MTOs are differentiated , in relation to (i) by output volatility and budgetary sensitivity to output; and in relation to (ii) by public debt levels and age-related liabilities. * Countries are expected to improve the structural balance by at least 0.5 p.p. each year until the MTO is achieved, with some leeway in bad times and an expectation that faster progress would be made in "good times". * "Good times" are periods with positive output gaps. * MTOs are revised every 4 years.	* Rules as regards MTOs are kept. * But past adjustment efforts towards MTOs proved inadequate. Seemingly fast/sound convergence of CABs towards MTOs masked strong reliance on windfall revenues to finance unusually high expenditure levels (i.e. the MTO instrument was not useful to fulfill criterion (i)). * **New principle of fiscal prudency to complement MTOs--Ceiling for Expenditure-to-GDP ratio** * Expenditure growth proportional to potential GDP growth prevents deficits from deteriorating sharply in bad times and allows for using unexpected extra revenues for debt reduction. * Countries having achieved MTOs: annual exp. growth not to exceed a "prudent" 10y-horizon GDP growth projection. * Countries that have not achieved the MTO: annual exp.growth not to exceed a rate below a "prudent" 10y-horizon GDP growth projection. Such rate set to ensure an "appropriate" adjustment towards the MTO. * Deviations are allowed if (i) the excess of exp. growth is explicitly covered by offsetting discretionary revenue measures; (ii) the country has significantly "overachieved" the MTO, or (iii) in periods of severe economic downturn of a general nature.
Preventive arm-Warnings and Sanctions in case of deviation from fiscal prudency	
* **Early warning** by the EC if significant deviation from the MTO. * **Council recommends** to take corrective action if persistent and/or serious deviation.	* Rules as regards early warnings and Council recommendations stay. * The meaning of "**significant deviation**" is clarified: A deviation reducing the government balance at least 0.5% of GDP in one single year or of at least 0.25% of GDP on average in two consecutive years.
	* Council recommendations backed by **interest-bearing deposit** (0.2% of GDP) **for EA countries only**, if no "appropriate action" is taken within a max. of 5 months (3 months in serious cases). * Decision making rule is Reverse Qualified Majority (RQM) within 10 days following EC proposal. * Deposit could be reduced/cancelled upon reasoned request from the country. * Deposit is returned, with accrued interest, once situation is deemed reversed or converted into fine in case of non-compliance.

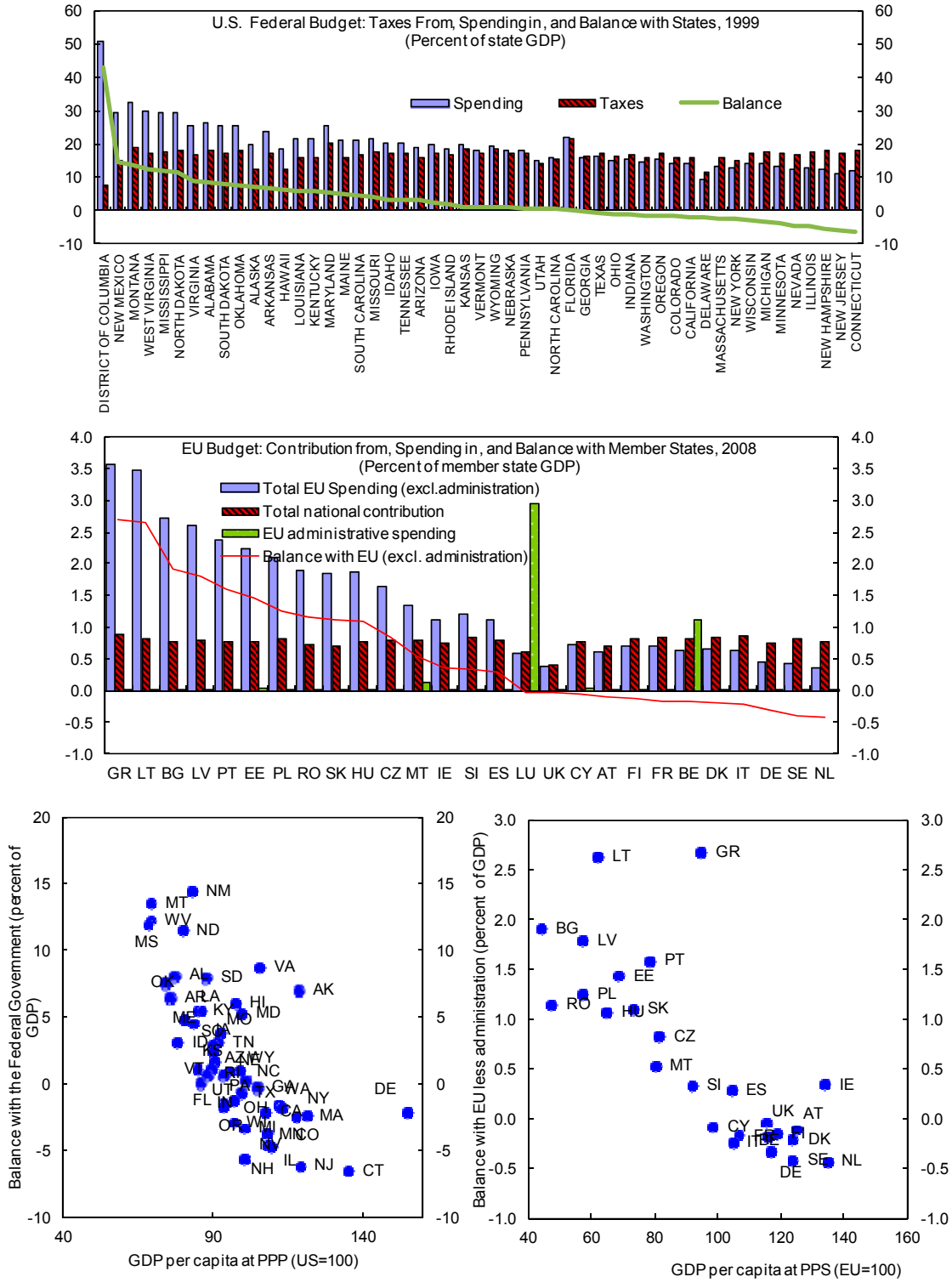
Source: Staff summary of current legislative proposals.

Table IV.2. Main Changes to the Stability and Growth Pact following the 2011 Reform—Corrective Arm

Current rules	Legislative Proposal
Corrective arm--Declaration of EDP--Correcting unsustainable budgetary policies	
* **The debt criterion** can lead to EDP unless the ratio is "sufficiently diminishing" and approaching the reference value at a "satisfactory pace".	* While both the deficit and debt criterion are on an equal footing in the Treaty, in practice only the deficit threshold activated the EDP. This was partly due to the ambiguity of the notion "sufficiently diminishing pace". * **Adoption of a numerical benchmark to gauge a "sufficiently diminishing" debt ratio**: the distance from the 60% target was reduced at an average rate of 1/20th per year over previous 3 years. * Grace period of 3 years from the entry into force of the regulation before the rule is applied ("account shall be taken of the backward looking nature of this indicator in its application"). * The debt criterion is far from being automatic: Non-compliance will not necessarily result in EDP. A risk analysis will examine factors contributing to debt dynamics including nominal growth, abd risk factors
Corrective arm--Activation, Deadlines, Reporting requirements and Sanctions	
* **EDP is activated** if a country does not fulfill at least one of the two Treaty thresholds and no "appropriate action" is taken to address Council recommendations , the Council may decide to place the country under EDP by QM, based on a EC report.	* Conditions to activate the EDP stay the same.
	* Upon a decision to place a country in EDP, **a non-interest-bearing deposit** amounting to 0.2% of GDP will apply **for EA countries:** • For countries previously subject to sanctions under the preventive arm, the interest-bearing deposit is transformed into a non-interest-bearing deposit. • Otherwise, the Council will adopt a recommendation setting a deadline for corrective action. In case of serious slippages, sanctions could be applied immediately. * **Deposit could be reduced or cancelled:** • by the EC on grounds of exceptional economic circumstances or following a reasoned request from the country concerned. • by the Council by QM.
* **A 6-month deadline** is set for taking corrective action for countries under EDP. * **The correction of the excessive deficit** should be accomplished **within one year**. * **Extension of deadline** is allowed for if "unexpected economic events with major unfavourable consequences for government finances occur". The deadline will be extended by one year "as a rule".	* Deadlines provisions remain the same.
* Within six months at most the country will present a **report** on action taken in response to the Council recommendations. The report will be made public.	* Reporting requirements remain the same.
* The Council may decide whether "**effective action**" has been taken. If no effective action has been taken within the deadline, the Council may **give notice** to the MS concerned to take measures to reduce the deficit. * **No deadline is specified for the Council to give notice** to the country concerned. * **Extension of deadline** is allowed for "unexpected adverse economic events with major unfavourable consequences for government finances". The extension will be granted by one year "as a rule".	* Deadlines provisions remain the same.
	* If no effective action is taken within four months after the Council notice, **the previous non-interest-bearing deposit will be converted into a fine.** * Fine could be reduced or cancelled: • by the EC based on exceptional economic circumstances or following a reasoned request from the country concerned • by the Council by Qualified Majority.
* If the MS fails to comply with the Council recommendations systematically, the Council may apply a fine including (i) a fixed component equal to 0.2 % of GDP, (ii) and a variable component, equal to one-tenth of the difference between the deficit as a percent of GDP and the 3% reference value. * If the EDP concerns the debt criterion, the variable component will be calculated with reference to the balance that should have been achieved in that year according to the notice issued by the Council.	* Provisions regarding the final fine remain the same.

Source: Staff summary of current legislative proposals.

Figure IV.1. EU and the U.S.: Fiscal Centralization and Redistribution



Sources: OECD; Haver Analytics; Harvard Kennedy School, Taubman Center for State and Local Government; and European Commission, DG Budget.

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V. RAISING POTENTIAL GROWTH IN EUROPE: MIND THE RESIDUAL[34]

A. Introduction

110. **Higher potential growth is needed in Europe to underpin debt sustainability, keep up living standards and shoulder the costs of ageing.** The challenge ahead is substantial, as even before the crisis potential growth in mature European economies hobbled around 2 percent, at a considerable distance from e.g. the U.S.

111. **The bulk of the EU-U.S. growth gap is explained by Total Factor Productivity (TFP).** It has become commonplace for growth accounting exercises to identify TFP as the main driver underlying the superior GDP growth in the U.S. since the mid-1990s (see, for instance, Jorgenson and others, 2008; van Ark and others, 2008), in stark contrast with previous decades, when TFP growth performance in Europe was well above that of the U.S.

112. **As a residual measure TFP has multiple interpretations, but it reflects in some way the overall efficiency of the production process.** This study is an attempt to link the growth residual to policy-relevant determinants such as levels of human and ICT capital, the regulatory environment, taxation and the degree of openness. Our focus is on ICT and market services industries, where U.S. TFP growth advantage was mostly concentrated.

113. **The paper is organized as follows.** Section B presents TFP patterns in 13 European countries and the U.S. This is followed by the description of the empirical setup and the data used in the analysis in Section C. Section D presents the main results and discusses the specific channels through which fundamentals may affect productivity. Section E uses the estimated model for policy simulation and Section F concludes.

B. TFP Growth in Europe and the United States

114. **This section examines growth accounting stylized facts for the U.S. and 13 European countries.** The sample includes Austria, Belgium, Denmark, Spain, Finland, France, Germany, Italy, Netherlands, Slovenia, Sweden, Ireland, the U.K. (henceforth referred to as EU13 or Europe for short), and the U.S. The analysis of other standard EU country groupings is prevented due to lack of data availability.

115. **During the pre-crisis period 1995–07, EU13's growth performance lagged by 1.2 percentage points relative to the U.S.** As documented in previous studies a substantial part of this growth differential (0.9 percentage points) was explained by weaker TFP growth, with only 0.3 percentage points being attributable to the differential growth in factor quality and quantity (Table V.1). The shortfall in TFP growth vis-à-vis the U.S. represents a reversal

[34] Prepared by Nandaka Molagoda and Esther Perez with statistical assistance from Xiaobo Shao.

compared with the period 1980–95, where productivity growth in Europe (at 0.9 percent) situated well above the U.S. (at 0.5 percent).

116. **TFP experiences within Europe are very diverse.** While productivity growth in Finland, Austria, Ireland, Slovenia and Sweden outperformed the U.S. during 1995–07, TFP decreased sharply in Spain and, less markedly, in Italy and Denmark. Core economies in the region, such as Belgium and Germany, while registering positive growth rates, generally fared poorly compared with the U.S.

117. **TFP growth strongly differs across industries too.** The productivity growth gap between Europe and the U.S. is largely accounted for by market services and, to a lesser extent, ICT-producing sectors (Table V.2). In contrast, goods production seems to be more efficient in Europe. For instance, in Austria, Germany, Finland, Slovenia and France, manufacturing industries are still important sources of productivity growth. In Spain and Italy, lackluster performance overall is not only due to slow growth in market services, but also in manufacturing, where traditional labor-intensive sectors face increasing low-cost competition from China and Eastern Europe (see, e.g. Chen and others, 2011). It is also important to note that Europe's lagging productivity is due more to a lack of dynamism within industries than to a bias towards low-productive industries. While positive, the TFP growth differential attributable to the allocation of resources towards lower-than-average productivity sectors is only about 20 percent of the total TFP growth gap (Table V.2, column 5). In what follows, we restrict our empirical analysis to productivity performance at the industry level.

118. **Cross-Atlantic TFP growth differences are concentrated in a handful of sectors.** Differences are found to be especially large in computers, electrical and optical equipment, and, for market services, in retail distribution, finance and business services, and real estate activities (Figure V.1). By contrast, Europe exhibits stronger TFP growth in network utilities, such as electricity, gas and water supply, and especially post and telecommunications.

C. Empirical Specification and Data Description

Empirical setup

119. **Our empirical approach is policy oriented.** Conceptually there are as many specifications for TFP as theories of endogenous growth. As our main focus is polices, we will adopt an eclectic approach focusing on two empirical regularities, namely technological catch-up with the leading industries and knowledge spillovers from the frontier economies to laggards (see Scarpetta and Tressel, 2002; Aghion and Howitt, 2005; and Griffith and others, 2006). The estimated equation is:

$$(1)\quad \hat{TFP}_{i,j,t} = \alpha + \beta_1\left(\hat{TFP}^{Leader}_{i,j,t}\right) + \beta_2\left(\ln\frac{TFP_{i,j,t-1}}{TFP_{Leader,i,j,t-1}}\right) + \gamma X_{i,j,t}$$

$$+ \sigma_1\left(\hat{TFP}^{Leader}_{i,j,t}\right)X_{i,j,t} + \sigma_2\left(\ln\frac{TFP_{i,j,t-1}}{TFP_{Leader,i,j,t-1}}\right)X_{i,j,t} + \rho_1 D_i + \rho_2 D_j + \rho_3 D_t + \varepsilon$$

where the indices *i, j, t* denote countries, industries and years; *Leader* denotes the country exhibiting the highest TFP *level* in sector *j* in year *t*; the sign ^ indicates growth rates; $X_{i,j,t}$ is a set of additional control factors that may affect TFP growth rates independently or interacted with explanatory factors in the baseline specification; and D_i, D_j and D_t are country, industry and year fixed effects.

120. **The specification allows for catching-up phenomena and knowledge spillovers.** TFP growth in a given country and sector depends on its ability to keep pace with TFP growth in the country with the highest productivity level (the frontier economy), as captured by the coefficient β_2. A negative coefficient indicates that the farther a sector is from the technology frontier the greater the scope for productivity improvements arising from technological catch-up. In addition TFP growth in the leader can have a *direct* impact on the followers' productivity growth (β_1)—whenever followers are involved in analogous breakthrough innovations or in the presence of knowledge spillovers, including through trade.

121. **The economic environment is assumed to influence the capacity to catch up with state-of-the-art technologies and to benefit from knowledge spillovers.** The variables we use to represent such framework conditions include human capital, the adoption of ICT technology, product market regulations, openness and corporate taxes. These variables enter both separately and interacted with the leader's TFP growth and the laggard's TFP distance from the frontier.

Data description

122. **Our panel data have cross-country, cross-sector and time series dimensions.** Our panel sample covers the 1980–07 period and includes 33 industries (Table V.3) located in the U.S. plus the EU13, namely all market services, the ICT-producing manufacturing sector and all industries in the economy that use ICT goods intensively. TFP growth rates are taken from the EU KLEMS (KLEMS henceforth) database, which contains a growth accounting exercise based on high-quality measures of factor inputs. KLEMS' growth accounting framework distinguishes between labor with different skill levels, ICT and non-ICT capital stock. In this framework, innovations that are factor specific are embodied in the definition of capital or labor inputs. For instance, the direct effect of the ICT revolution appears as a change in the composition of capital services (from non-ICT to ICT capital services). Similarly, changes in human capital are embodied in the stock of labor services. This methodology thus allows assessing TFP developments excluding the impact of changes in the quality of both capital and labor inputs.

123. **The technology gap term is constructed using the Groningen Growth and Development Center (GGDC) Productivity Level database.** This databank (Inklaar and Timmer, 2009) contains PPP-adjusted TFP levels consistent with the KLEMS growth accounts. Anchoring TFP KLEMS growth rates to the 1997 levels, technological leaders and followers can be identified across all sample countries, industries and time periods. As a way of illustration, in 2007, Sweden and Netherlands were situated at the technological frontier in network utilities, while the U.S. dominated in ICT-producing industries and business services (Figure V.2). The TFP growth at the frontier (the other key factor in the baseline model) is represented by the TFP growth of the country with the highest TFP *level* in industry *j*, in year *t.*

124. **Human capital is proxied by the ratio of high skilled labor to overall labor.** Skilled labor is measured by the share of the labor force having completed tertiary education. The ratio of ICT capital to non-ICT capital is added to the regression to control for the role of ICT technologies in facilitating TFP growth. According to this measure, human capital is found to be most developed in U.S., Finland, Spain, Sweden, and Ireland, both in services and ICT sectors, while the proportion of ICT in non-ICT capital services is highest in Anglo-Saxon and Nordic countries (Figure V.3).

125. **The regulatory stance in product markets is measured by the OECD Regulatory Impact indicator (RI).** The RI indicators (developed by Conway and Nicoletti, 2006), measure the "knock on" effect on each industry arising from anti-competitive regulations in up-stream network industries (energy, transport and telecommunications), retail distribution and professional services. Besides reflecting the extent of anti-competitive regulation in non-manufacturing sectors, the RI indicators also capture their economic importance as supplier of intermediate inputs to other sectors—hence the importance of increasing competition in these sectors. Barring post and telecommunications, "knock on" effects in key ICT and services sectors in EU13 countries are generally well above the U.S. (Figure V.4).

126. **Gauging the impact of corporate taxes on sectoral TFP is not straightforward, as those tax indicators are not differentiated by industries.** An indirect way to test for these effects is to see whether the impact of corporate taxes on TFP growth is shaped by industry-specific characteristics, in particular, profitability rates (Vartia, 2008). To implement this, the OECD statutory corporate tax levied on corporate profits at a flat rate (and applying to the majority of the corporations) is linked to profitability, as determined by the ratio of operating profits over value added (both obtained from the OECD STAN database)[35]. Firms' profits are taxed at the highest rates in core Europe and the U.S. while Ireland, Austria, Denmark, and the Netherlands stand out as the countries with the lowest tax burden on profits (Figure V.3).

[35] There are many ways to combine profitability and tax rates but in the empirical specification discussed in section IV the product of both variables proved to be particularly relevant.

127. **We enter the degree of openness in the regression separately and interacted with both the technological gap and TFP growth of the leader country.** This approach is consistent with previous findings in the economic growth literature pointing to a strong link between openness, innovation spillovers and the technological catch up (see, for instance, Rivera-Batiz and Romer, 2006). In order to obtain industry-specific measures of openness, we express for each sector the sum of imports and exports (as compiled in the OECD STAN database) as a share of sectoral value added. The small European economies of Belgium, Ireland and the Netherlands are predominantly open, while the U.S., U.K., France, Italy, and Spain are comparatively closed (Figure V.3).

D. Results

128. **Confirming past studies, our results suggest that, across the whole sample of industries, TFP growth benefits from the innovations carried out in the leading economy.** In addition, the coefficient of the productivity gap is negative[36] and significant, indicating the importance of international diffusion of new-vintage technologies. Broadly, a 1 percent increase in TFP growth in the frontier economy results in a 0.1 percentage point increase in TFP growth, while a 1 percent larger TFP gap one period earlier results in almost 0.4 percentage point increase in TFP growth. However, given the size of the average TFP gap and the average TFP growth rate of the frontier economy, the contribution of the leader's productivity improvements is, on average, about six times larger.

129. **Both human and ICT capital appear to have a significant explanatory power.** Our estimates suggest that human capital has a positive coefficient on its own (even though our measure of TFP controls for the composition effects of labor input) and when interacted with TFP growth at the frontier, pointing to the importance of a highly educated workforce for innovation and knowledge spillovers. In line with past studies investigating the role of human capital in determining the pace of convergence with frontier innovation (see, for instance, Vandenbusche and others, 2006), the positive coefficient of the interaction with the catch up effect implies a stronger TFP impact of human capital the closer a sector is from the frontier. As with human capital, a higher proportion of ICT capital appears to be a facilitator of technology spillover effects.

130. **In keeping with previous studies, we find a direct negative impact of RI on TFP growth.** The literature pointing to a negative relationship between product market regulation, entrepreneurship and productivity is voluminous (see for example Scarpetta and Tressel, 2002; Brandt, 2004; Conway and others, 2006; Crafts, 2006; and their extensive reference lists).

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[36] The technological gap measures the distance of each sector from the leader country, thus it always takes negative values (see equation (1)). A negative coefficient for the technological gap thus implies a positive impact on TFP growth.

Product market rigidities can impair productivity by reducing incentives to invest, adopt frontier technologies, or innovate, not least because overregulated markets prevent the entry of high-productivity firms and the exit of inefficient competitors (Fonseca and others, 2001, Barseghyan, 2008, and Nicoleti and Scarpetta, 2003). We find that product market regulations reduce TFP growth more markedly the closer are industries from the frontier (as indicated by the negative interaction with the technological gap variable), where productivity growth is more strongly based on innovation rather than the adoption of existing technologies. As revealed by the negative significant interaction with TFP growth in the frontier economy, our results support the view that innovation incentives are increased by competitive pressures (Aghion and others, 2006).

131. **Corporate taxes appear to hamper TFP growth.** Our estimation approach assumes that corporate taxes affect TFP through industry-specific profitability rates. In line with Vartia (2008), the estimated coefficient of the product of corporate tax and profitability rates is negative. This can be interpreted as an adverse effect of corporate tax rates on TFP, with this effect being larger in industries that are inherently characterized by a high return. By investing in R&D activities relatively more than the average firm in the economy, high-profitable industries may be also more vulnerable to tax increases insofar as they shrink the remuneration of factors associated with high-risk projects. Besides reducing incentives to innovate, corporate taxes may distort relative factor prices leading to inefficient factor input combinations which may lower TFP growth (Auerback and Hines, 2002). Corporate taxes may also reduce FDI and hinder knowledge spillovers to domestic firms, arguably more so in those industries characterized by the highest returns.

132. **Openness is key to knowledge creation and assimilation.** To gauge the potential of trade flows in improving TFP growth, we enter openness separately and interacted with the catch-up factor. To our knowledge, the influence of openness was not considered in previous analysis. We find a positive impact of openness on economic efficiency, both directly and by improving the absorption capacity of existing technologies.

133. **We ascertain the relative importance of each explanatory factor taking into account both direct and indirect effects.** Using the estimated coefficients provided in Table V.4, we compute the response of TFP growth (averaged across both industries and countries) to a one-standard-deviation increase in each variable, independently or interacted with knowledge spillovers and/or the catch-up term. The results (Table V.5) point to regulatory impact and corporate taxes as the variables having the highest influence on productivity growth, followed by openness and human capital. However, this policy ranking is more apparent than real, as the changes associated with one-standard-deviation increases in the first two variables are huge. Thus we turn in the following section to the analysis of more meaningful policy experiments.

E. Can Policies Help?

134. **This section presents some illustrative simulation experiments.** To this aim, we quantify the differential (on average over the period 1995–07) between each country's TFP growth, as estimated by the model, and the TFP growth that would prevail if all sectors in each country were to see i) regulation reduced to the lowest sample levels; ii) ICT/non-ICT capital ratio increased to the highest sample levels; iii) human capital augmented to mimic best sample practices; iv) openness increased by 20 percentage points; v) corporate taxes cut down to 22 percent[37]; and vi) the suggested changes undertaken altogether. Rather than as a literal description of what every country ought to do, the simulation presented here is meant to illustrate the scope for TFP gains and to generate a benchmark against which to make cross-country comparisons. Clearly, countries need not to adopt such reform package in full, but may target specific policy areas and decide on the speed of reform that best suits their needs.

135. **Simulated scenarios imply that best to improve TFP growth in most countries is to open markets to domestic and foreign competition.** Belgium, Italy, Austria, France, Germany, and Spain have to gain the most from lightening their regulatory environment. Though less powerful than a shock to the regulatory impact, higher exposure to international competition also unlocks considerable TFP growth returns, most markedly in the relatively closed economies of the U.S., Spain, Italy, and France. Bolstering human capital is found to deliver sizable productivity increases too, especially in Ireland, Sweden, Denmark, Sweden, Netherlands, and Belgium. Corporate tax cuts would trigger substantial TFP improvements in Germany and Italy. Intriguingly enough, there is no visible TFP effect to incorporating higher levels of ICT capital as a share of overall capital. For all countries identified above, each of the simulated scenarios would add at least 0.4 percentage points to TFP growth.

136. **The results are indicative of a substantial scope for reform**. The combined impact of those changes would yield large TFP growth returns in all countries, with Germany, Belgium, Italy, France, Austria, and Denmark benefiting the most from the implementation of such an ambitious policy package (Figure V.5). Of course, actual growth impact will vary with the ambition of the reform agenda, the speed of its implementation, and the time needed for these reforms to take hold.

137. **The sectoral approach allows us to identify the industries contributing the most to unleash TFP growth potential.** Some regularities are revealed by the data upon the adoption of the policy package described under point vi) above (and represented in Figure V.6 for aggregate TFP in each country). Electrical and optical equipment stands out as the sector with the highest TFP growth potential in 10 countries, followed by renting of machinery, equipment and business activities, and other community, social and personal services (7 countries each). Printing and

[37] This is the average value of statutory tax rates in Ireland over the period 1995-07.

publishing, machinery, nec[38], and wholesale and retail trade seem to lock substantial productivity gains in 6 countries. In contrast, the TFP improvements arising from network industries (post and telecommunication, transport and storage and utilities) are comparatively more modest. This may point to the effectiveness of the Single Market Program in liberalizing traditionally monopolistic sectors, compared with its capability to open up professional services in general. Quite clearly, there is no one-size-fits-all approach to fostering TFP growth but there is room for focusing policy initiatives on those industries where TFP gains are concentrated in most countries.

F. Conclusion

138. **Europe needs to seek growth by opening up markets to domestic and foreign competition, enhancing human capital and, to a lesser extent, easing corporate taxation.** Continued efforts in this direction should improve Europe's capacity to sell goods and services abroad and become an attractive destination for investors. And to the extent that our findings are relevant, more openness—a powerful innovation generator and transmitter of existing technologies—should bring about more growth for Europe.

139. **More competition in services would spur innovation and accelerate convergence with frontier technologies.** The Single Market Program has been more effective in liberalizing monopolistic sectors such as energy and telecommunications than in removing obstacles to competition in professional services. Many services could benefit from a truly single market across Europe. An ambitious implementation of the Services Directive (i.e. reducing to the minimum the list of justified restrictions for proportionality reasons by alignment to best practices under the Mutual Evaluation Process) should unleash the potential to increase productivity growth across Europe.

140. **Improving education is a must for keeping up with rapid technological change and for continuing innovation.** Beyond increases in spending on education and training, the quality of this spending is crucial. Experience shows that evaluation and targeting of training are important to maximize its impact.

141. **Our results provide some support to the view that corporate taxes are harmful for growth insofar as they discourage innovation in the most dynamic and profitable firms.** Previous studies have also pointed to the relationship between lower corporate taxes, FDI, and productivity gains for domestic firms. Although reducing the tax burden on corporates' profits might, in the short run, may conflict with the need to ensure fiscal sustainability, this does not imply that government should not start consider avenues for fiscally neutral shifts.

[38] Not classified elsewhere

Table V.1. Contribution to Growth of Real Output in the Market Economy, EU Economies and the U.S., 1995–07
(annual average growth rates, in percent)

		Output contribution from		Labor productivity contributions from			
	Growth rate of output	Hours worked	Labor productivity	labor composition	ICT capital per hour	Non-ICT capital per hour	TFP
	1 = 2+3	2	3=4+5+6+7	4	5	6	7
Austria	2.7	0.4	2.4	0.2	0.5	0.2	1.5
Belgium 1/	2.5	0.5	2.0	0.2	0.9	0.6	0.2
Denmark	2.4	1.0	1.4	0.1	1.0	0.4	-0.2
Finland	4.5	1.0	3.5	0.1	0.6	0.2	2.5
France	2.5	0.3	2.1	0.4	0.3	0.5	0.9
Germany	1.3	-0.3	1.7	0.0	0.5	0.5	0.7
Ireland	7.6	2.1	5.5	0.3	0.4	3.3	1.6
Italy	1.7	0.7	1.0	0.1	0.3	0.7	-0.2
Netherlands	3.1	0.8	2.3	0.4	0.6	0.3	1.1
Slovenia 2/	4.4	0.1	4.3	0.5	0.4	1.7	1.6
Spain	3.5	2.0	1.5	0.4	0.5	1.4	-0.7
Sweden	4.1	0.6	3.5	0.3	0.7	1.2	1.4
UK	3.2	0.4	2.8	0.5	0.8	0.5	1.0
EU13 3/	2.2	0.5	1.6	0.2	0.6	0.7	0.2
USA	3.5	0.6	2.9	0.3	1.0	0.5	1.1

Source: KLEMS database. The market economy ICT production (manufacturing of electrical and optical equipment, post and telecommunication services), goods production (agriculture, mining, manufacturing excluding electrical machinery, construction and utilities), and market services (distribution services, financial and business
1/ From 1995-06.
2/ From 1996-06.
3/ Data for European Union refer to 13 countries in the table.

Table V.2. Major Sector Contribution to TFP Growth in the Market Economy, 1995–07
(annual average growth rates, in percent)

	TFP	ICT production	Goods production	Market services	Reallocation
	1 = 2+3+4+5	2	3	4	5
Austria	1.5	0.2	1.7	-0.1	-0.3
Belgium 1/	0.2	0.0	0.6	-0.2	-0.2
Denmark	-0.2	0.2	-0.1	-0.2	0.0
Finland	2.5	1.2	1.0	0.5	-0.1
France	0.9	0.3	0.6	0.1	-0.1
Germany	0.7	0.4	0.7	-0.2	-0.2
Ireland	1.6	1.0	0.5	0.4	-0.4
Italy	-0.2	0.1	-0.1	-0.2	0.0
Netherlands	1.1	0.3	0.3	0.5	0.0
Slovenia 2/	1.6	0.2	1.6	0.1	-0.3
Spain	-0.7	0.0	-0.2	-0.4	-0.1
Sweden	1.4	0.8	0.5	0.2	-0.1
UK	1.0	0.3	0.2	0.5	0.0
EU13 3/	0.2	0.3	0.3	-0.3	-0.1
USA	1.1	0.6	-0.1	0.5	0.1

Source: KLEMS database. ICT production includes manufacturing of electrical and optical equipment, post and telecommunication services. Goods production includes agriculture, mining, manufacturing (excluding electrical machinery), construction and utilities. Market services include distribution services, financial and business services, and personal services.
1/ From 1995-06.
2/ From 1996-06.
3/ Data for EU13 refer to the 13 countries in the table.

Table V.3. Industry Coverage

SIC Code	Industry Name
21t22	Pulp, paper, paper products, printing and publishing
29	Machinery, nec 1/
30t33	Electrical and optical equipment
36t37	Manufacturing nec 1/; recycling
40t41	Electricity, gas, and water supply
45	Construction
50t52	Wholesale and retail trade
55	Hotels and restaurants
60t63	Transport and storage
64	Post and telecommunications
65t67	Financial intermediation
70	Real estate activities
71t74	Renting of machinery and equipment and other business activities
90t93	Other community, social and personal services

Source: IMF Staff.
1/ The acronym nec stands for "not elsewhere classified."

Table V.4. TFP Growth Determiants: EU13 and the U.S. (1980–07), ICT Industries and Market Services

Dependent variable: TFP growth rate	Coefficient	t value
TFP growth in the frontier	0.10**	2.26
TFP relative to the frontier (t-1)	-0.44**	-2.18
ICT capital/non-ICT capital	0.00***	5.83
Openness	7.21***	2.75
Human capital	0.02	0.36
Regulatory Impact	-9.65*	-1.87
Profitability * corporate tax rate (t-1)	-0.20***	-4.45
Interactions:		
Regulatory impact * TFP growth in the frontier	-0.38**	-2.36
Regulatory impact * TFP relative to the frontier	-3.39	-0.72
ICT capital/non-ICT capital * TFP growth in the frontier	0.00*	1.64
Human capital * TFP growth in the frontier	0.01**	2.3
Human capital * TFP relative to the frontier	0.03*	1.67
Openness * TFP relative to the frontier	9.02***	3.84
Number of obs = 1439		

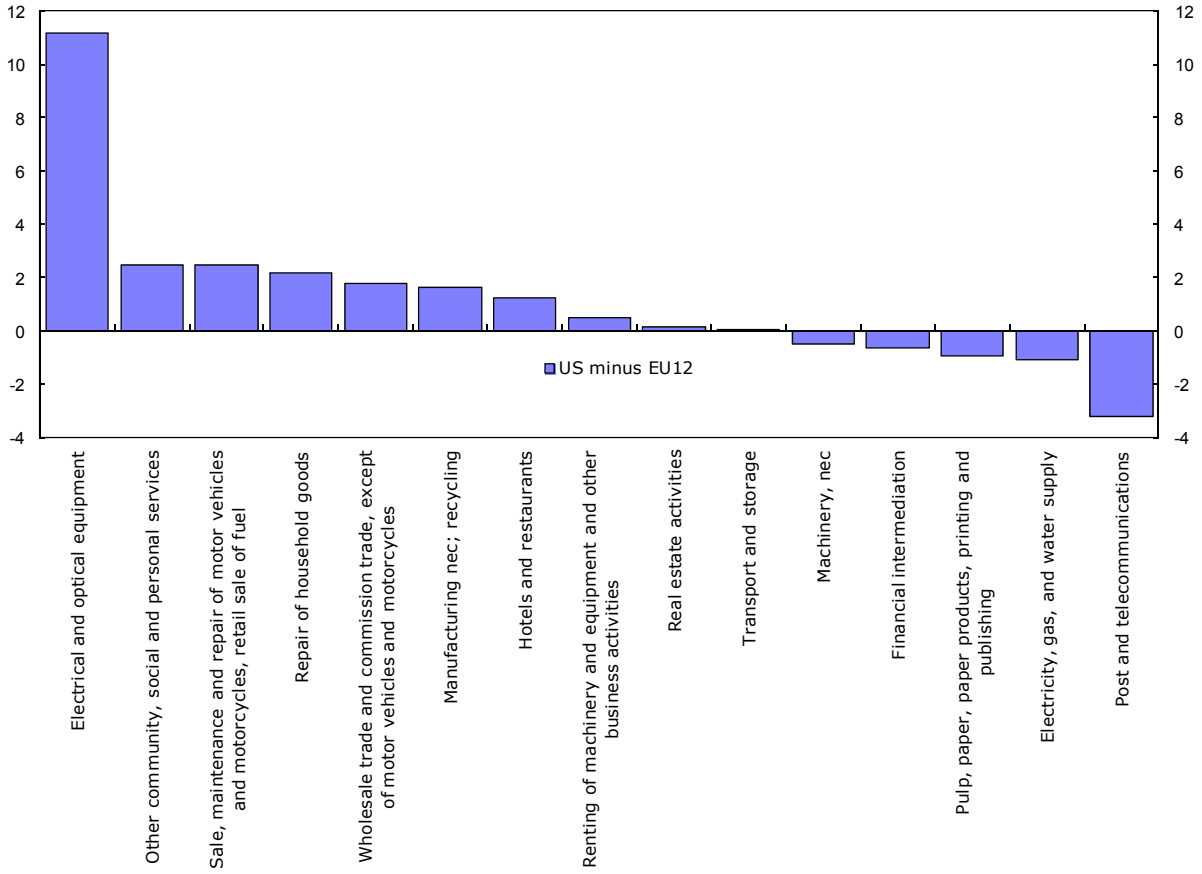
Note: Panel regression with country, industry and fixed effects. Robust standard errors are reported in the parentheses. *, ** and *** denotes significant at 10, 5 and 1 percent levels.

Table V.5. Change in TFP Growth from a 1 Standard Deviation Increase in Model Variables

	Direct	Indirect 1/		Overall effect
		TFP frontier	TFP relative	
Regulatory impact	-1.53	-0.08	0.38	-1.22
ICT capital/non-ICT capital	0.00	0.00		0.00
Human capital	0.26	0.17	-0.27	0.15
Openness	2.59		-2.29	0.29
Profitability&corporate tax rate	-1.10			-1.10

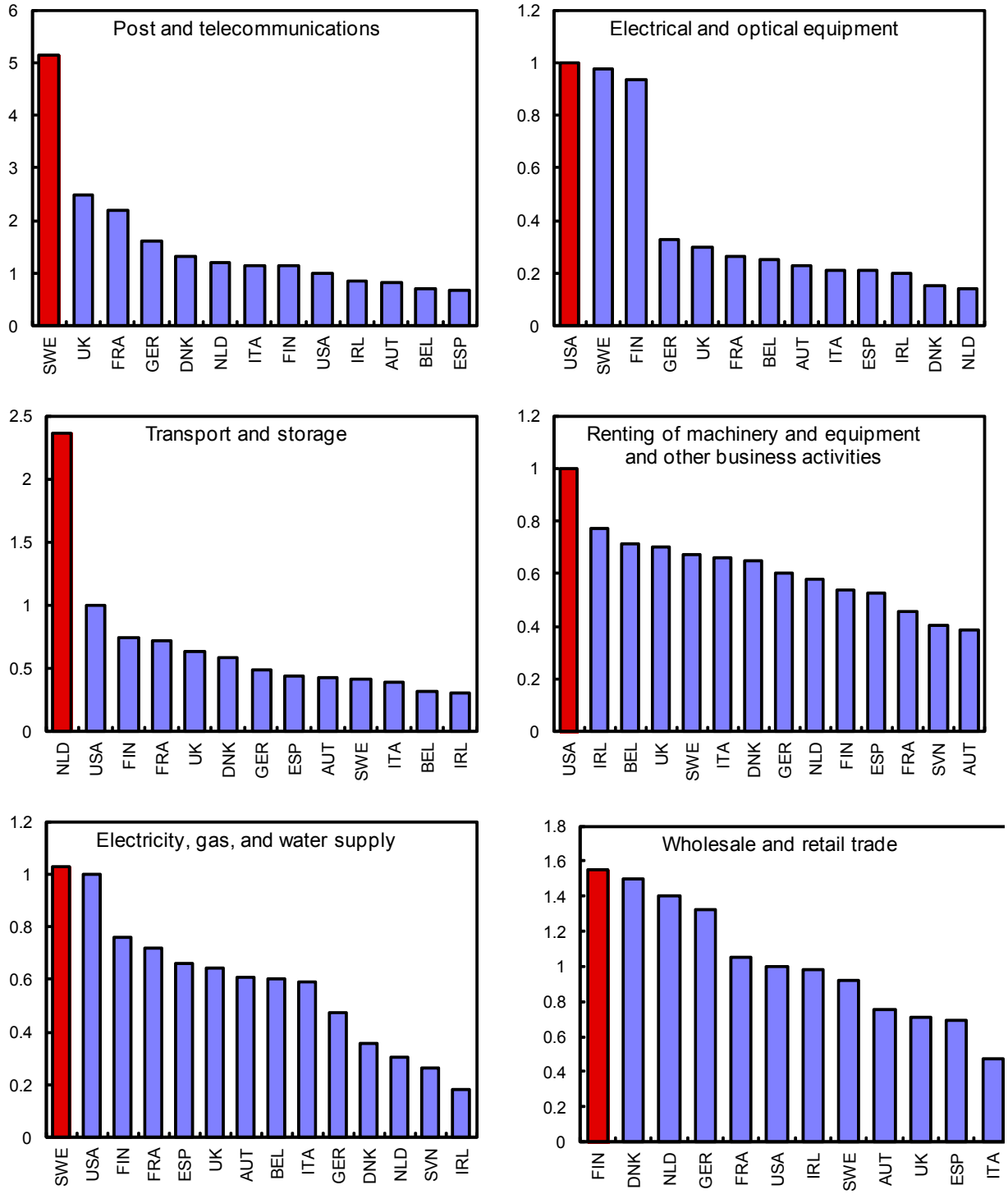
1/ Evaluated at sample mean.

Figure V.1. EU13 TFP Growth Differential with the U.S.
(% Difference, Average, 1995-07)



Source: EU KLEMS database.

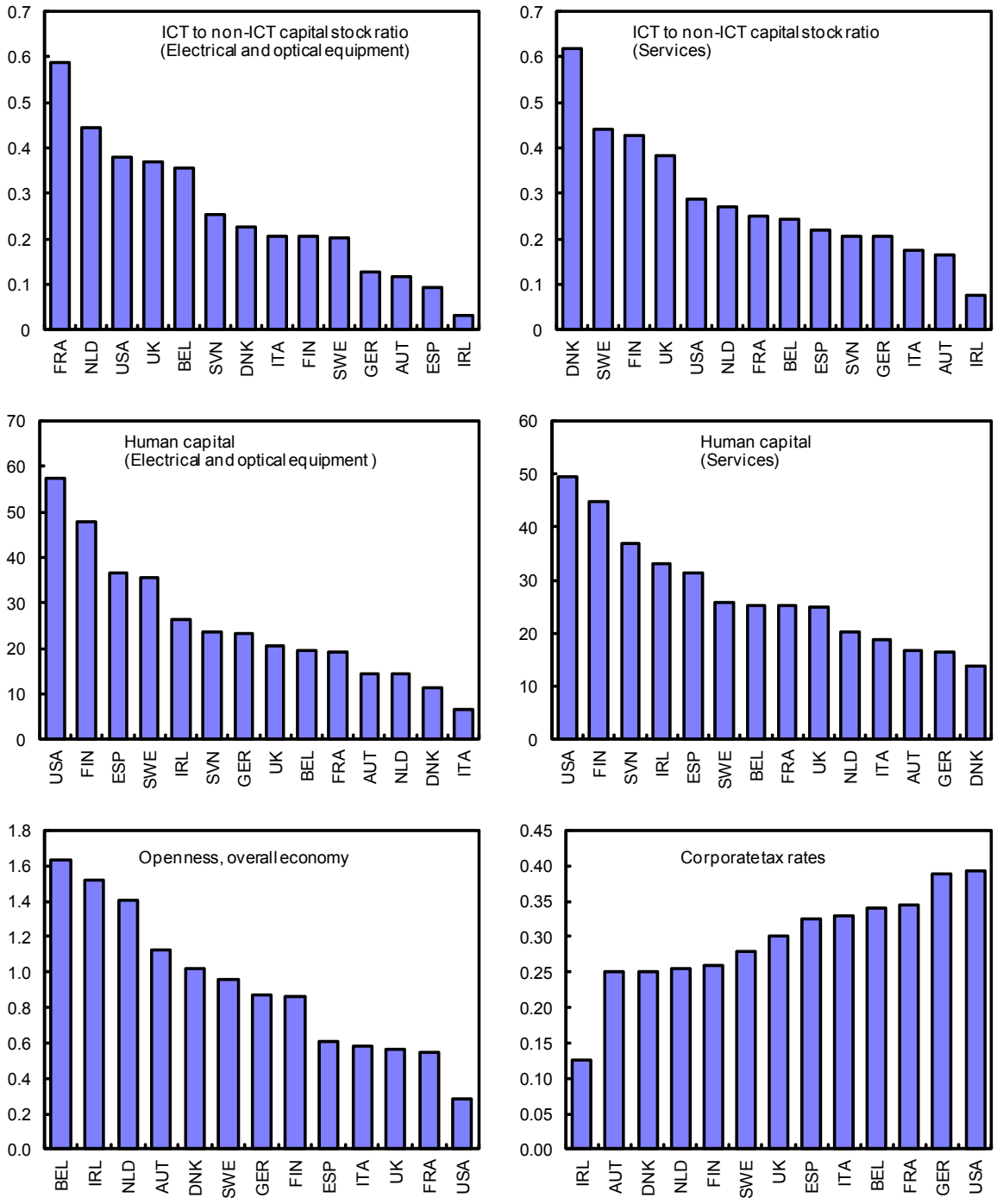
Figure V.2. Technological Leaders in 2007: Selected Services Sectors
(Productivity Levels relative to the U.S. US=1 in 1997)[1/]



Sources: EU KLEMS database; GGDC Productivity Level database; and Staff Calculations.
1/ For each country, the technology gap term is computed as the ratio between the productivity level in that country and the productivity level in the US. US productivity levels, set at 1 for all sectors in 1997, are backcast and forecast using EU KLEMS TFP growth rates.

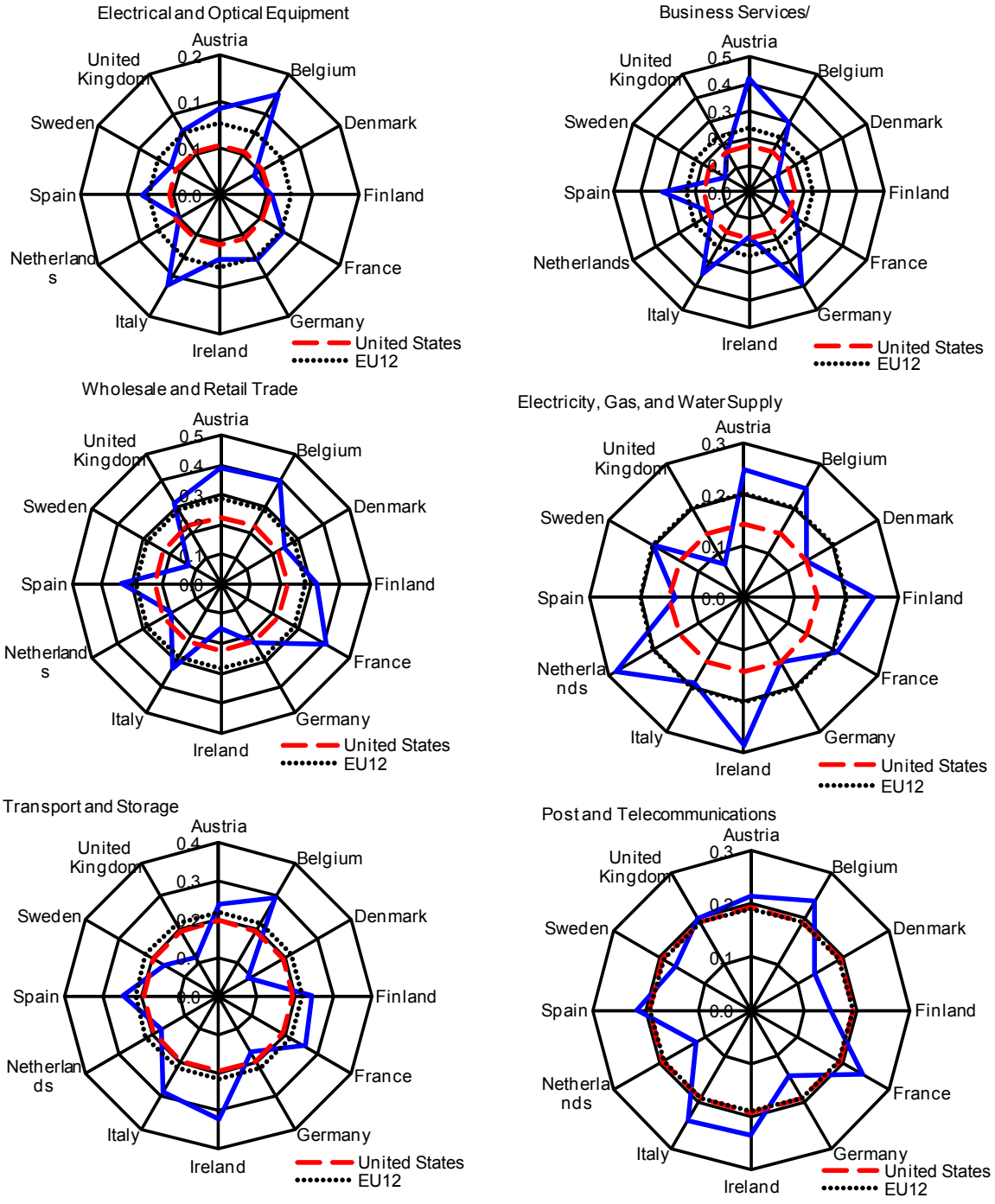
Figure V.3. EU13 and the U.S.: TFP Growth Fundamentals

Levels, 2007



Source: EU KLEMS database; OECD Tax database; and WEO.

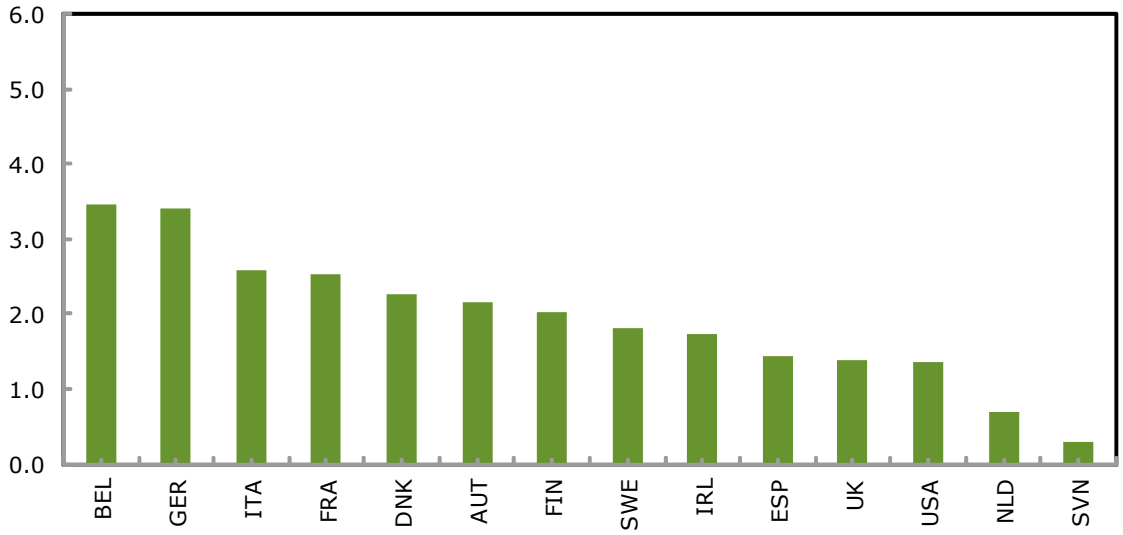
Figure V.4. EU12 and the U.S.: Impact of Regulations Network Industries, Distribution and Business Services[1/]
(OECD Regulatory Indicators, 2008)



Source: OECD.
1/ The OECD Regulatory Impact Indicators measure the "knock on" effect of each industry arising from anti-competitive regulations in network industries (energy, transport and commnications), retail distribution and professional services.

Figure V.5. Reform Impact on Annual Aggregate TFP Growth[1/]

(percentage points deviation from baseline, average 1995–07)

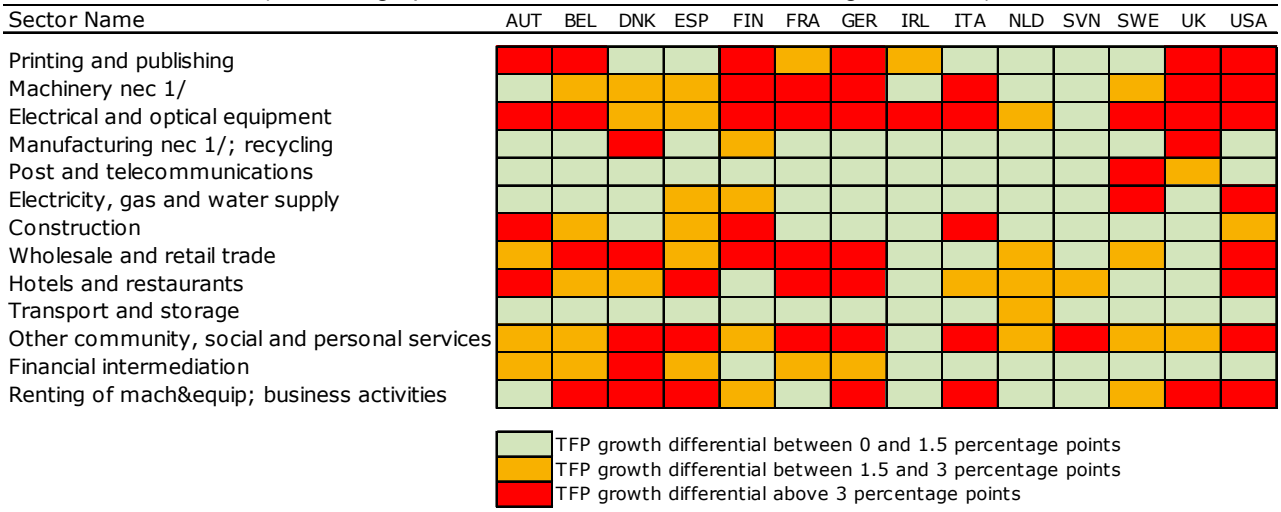


Source: KLEMS data and Staff Estimates.

1/ In the simulated scenario RI is reduced to the lowest sample levels; ICT to non-ICT capital ratio is increased to the highest sample levels; human capital is augmented to mimic best practices; openne is aligned with the most exposed country for each sector; and corporate taxes are cut down to 22 percentage points across the board.

Figure V.6. Reform Impact on Sectoral TFP Growth

(Percentage points deviation from baseline, average 1995–07)



Sources: KLEMS; and IMF staff estimates.

1/ The acronym nec stands for "not elsewhere classified."

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