INTERNATIONAL MONETARY FUND

IMF Country Report No. 17/5

FINLAND

FINANCIAL SECTOR ASSESSMENT PROGRAM

January 2017

TECHNICAL NOTE—MACROPRUDENTIAL POLICY FRAMEWORK

This Technical Note on Macroprudential Policy Framework for Finland was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed in November 2016.

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International Monetary Fund
Washington, D.C.

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TECHNICAL NOTE

MACROPRUDENTIAL POLICY FRAMEWORK

Prepared By

Monetary and Capital Markets Department

This Technical Note was prepared in the context of an IMF Financial Sector Assessment Program (FSAP) mission in Finland during June 2016 led by Mr. Marco Pinon-Farah. It contains the technical analysis and detailed information underpinning the FSAP assessment's findings and recommendations. Further information on the FSAP program can be found at http://www.imf.org/external/np/fsap/fssa.aspx.

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Glossary

BCBS	Basel Committee on Banking Supervision
BoF	Bank of Finland
CCB	Countercyclical capital buffer
CRDIV	Capital Requirements Directive
CRR	Capital Requirements Regulation
DSGE	Dynamic stochastic general equilibrium
DSTI	Debt-Service-to-income
EBA	European Banking Authority
ECB	European Central Bank
ESFS	European System of Financial Supervision
ESRB	European Systemic Risk Board
EU	European Union
FIN-FSA	Finnish Financial Supervisory Authority
GFC	Global Financial Crisis
O-SII	Other systemically important institution
G-SII	Global systemically important institution
LCR	Liquidity coverage ratio
LTC	Loan-to-collateral
LTI	Loan-to-income
LTV	Loan-to-value
NSFR	Net stable funding ratio
MoF	Ministry of Finance
MoSH	Ministry of Social Affairs and Health
MoU	Memorandum of Understanding
SRB	Systemic risk buffer
SSM	Single Supervisory Mechanism

EXECUTIVE SUMMARY

The macroprudential policy framework in Finland has experienced major changes recently and the mandate has become shared with the ECB. First, a domestic framework was formalized in 2014. The Board of the Financial Supervisory Authority (FIN-FSA) was designated as the authority to implement a set of macroprudential instruments in Finland, and a coordination mechanism among domestic authorities for macroprudential policy, including the Bank of Finland (BoF), was established. Second, with the start of the European Single Supervisory Mechanism (SSM) in 2014, the European Central Bank (ECB) was designated as a macroprudential authority for the euro area, with the European Systemic Risk Board (ESRB) continuing to play an advisory role for all European Union (EU) countries. As a result, macroprudential policy has become a shared responsibility among the national authorities, and the European Union and euro-area level authorities.

The national institutional arrangement has been strengthened in recent years. More specifically:

- The 2014 Act on Credit Institutions assigned the Board of the FIN-FSA decision-making powers on specific macroprudential policy instruments. The BoF is represented by the Deputy Governor as chair of the FIN-FSA's Board. However, the FIN-FSA's mandate for macroprudential policy is narrowly defined, and its hard powers are limited to the macroprudential instruments in the legislation.

- The BoF and the FIN-FSA jointly conduct systemic risk monitoring. As an established practice, the BoF is primarily responsible for the cyclical and interlinkages analysis, and the FIN-FSA for analysis at individual institutions' level. They jointly prepare vulnerability analyses and preliminary recommendations ahead of the FIN-FSA Board meetings, based on which the FIN-FSA Director General makes proposals to the Board on the implementation of macroprudential tools. The macroprudential analysis is summarized in quarterly joint macroprudential reports for the Board meetings, and in semi-annual joint reports for external publication.

The Finnish authorities regularly coordinate and collaborate with international bodies on macroprudential policy. Because of their shared macroprudential responsibilities, the Finnish authorities regularly communicate with the ECB and the ESRB, particularly for their quarterly macroprudential decision makings and for the systemic risk assessments made by the ECB. They also regularly discuss with Nordic and Baltic jurisdictions on financial stability risks, through their participation in the Macroprudential Forum. While the Forum does not have binding powers, it has served well as an informal coordination platform among the countries in the region.

Several macroprudential instruments were formally introduced in the legislation and activated recently. The 2014 Act on Credit Institutions implements macroprudential instruments, including those set out in the European Capital Requirement Directive (CRDIV). Four banks have been designated as systemically important, with additional capital requirements from January 2016. A loan-to-collateral cap for housing loans will become effective from mid-2016. Other instruments in the toolkit, including the counter-cyclical capital buffer, have not been activated, reflecting a lack of conclusive evidence on heightened systemic risks.

Despite the important progress made, there are some improvements that should be considered (Table 1).

- The FIN-FSA's mandate is narrowly defined over the use of tools explicitly approved by laws. Clarification of a broader macroprudential policy mandate in the law would strengthen the willingness and ability to act. To strengthen the capacity of the FIN-FSA in line with the new mandate, the FIN-FSA's human resources for macroprudential policy should be expanded. In addition, consideration should be given to formalize the chairmanship of the BoF representative in the decision making meetings, and the use of BOF's expertise in macroeconomic analysis for systemic risk assessments, as well as the staff-level cooperation framework among the FIN-FSA, the BOF and the MoF for macroprudential policy through a memorandum of understanding (MOU).

- Detailed analyses of risks using more granular data are needed to calibrate macroprudential tools to appropriately target relevant systemic risks, maximizing their effectiveness and minimizing distortions. To this end, there are important data gaps that need to be filled, including more disaggregated data on the household and housing sector.

- In addition, the macroprudential policy toolkit should be expanded. The systemic risk buffer should be added to the toolkit, although its activation and level may still need further analysis. In addition, the current tools in Finnish legislation are predominantly focused on the CRDIV/CRR requirements, with the exception of the LTC limit. In light of potential cross-border leakages for capital based tools and risks in the household sector, macroprudential tools based on borrowers' eligibility, such as caps on loan-to-income or debt-service-to-income ratios, and their interlocking use with limits on loan maturity should be considered.

- Finally, the authorities should seek to further strengthening regional cross-border cooperation. Considering the high interconnectedness within the Nordic region and the reduced influence by host supervisors on regional bank branches' operations, strengthening the collaboration of supervisory authorities in the region is desirable, in particular, in the area of supervisory information sharing and joint stress-testing.

Table 1. Finland: Recommendations on Macroprudential Policy Framework

Recommendations and Authorities Responsible for Implementation	Agency	Time*
Institutional Arrangements		
Clearly define a macroprudential policy mandate of the FIN-FSA beyond the measures approved in laws	MoF	NT
Expand the human resources of the FIN-FSA for macroprudential policy	FIN-FSA	NT
Formalize the practice that the FIN-FSA Board member proposed by the BoF chairs the FIN-FSA Board for meetings on macroprudential policy	MoF	I
Explicitly set out a domestic cooperation framework for macroprudential policy in an MOU	FIN-FSA, BoF, and MoF	I
Seek to further strengthen collaboration with Nordic-Baltic macroprudential authorities in supervisory data sharing and joint stress testing exercises	FIN-FSA, BoF, and ECB	NT
Systemic Risk Monitoring		
Enhance the presentation of macro-financial linkages analysis in the financial stability report	BoF	I
Start creating a household loan registry system	FIN-FSA	NT
Tools and Calibration		
Complete the process to set higher risk weights on housing loans with reciprocity agreements in place for foreign bank branches	FIN-FSA, BoF, and MoF	I
Redefine or review the calibration of the loan-to-collateral limit	FIN-FSA and BoF	NT
Introduce the loan-to-income limit to the toolkit	MoF	NT
Once a loan registry system becomes available, introduce a maximum debt-service-to-income ratio and a maximum maturity limit for household loans	MoF	MT
Introduce the systemic risk buffer to the toolkit	MoF	I
Assess application and calibration of the systemic risk buffer	FIN-FSA, BoF	NT

* I (immediate) = within one year; NT (near term) = 1-3 years; MT (medium term) = 3-5 years.

INTRODUCTION[1]

1. **Since the Global Financial Crisis (GFC), the need for macroprudential policy has been recognized globally**. The crisis demonstrated that systemic risks can grow under the surface of economic tranquility, and macroprudential policy is needed to achieve the stability of the system as a whole. This arises from the awareness that the traditional focus of microprudential policies on idiosyncratic risks and the health of individual financial institutions need to be complemented by a system-wide perspective, as both macro-financial linkages and interconnections within the financial system can give rise to systemic risk.

2. **The structure of the financial system in Finland requires a strong macroprudential framework.** Although the Finnish financial sector has weathered the GFC and the following recession relatively well, continued macroeconomic weakness and an extended period of low interest rates increase a potential for buildup of systemic risks, particularly given household indebtedness at or near historic highs. In addition, the banking sector's structural features, including its reliance on wholesale funding, large use of derivatives (mainly related to customer activity), high regional interconnectedness, and high concentration potentially pose considerable vulnerabilities. Given all of these features, there is a need for high capacity to assess systemic risk analysis and to implement macroprudential measures.

3. **Against this background, Finland set up its macroprudential institutional framework in 2014**. The Act on Credit Institutions, adopted in August 2014, transposes the relevant macroprudential articles of the Capital Requirement Directive and Regulation (CRDIV/CRR) and defined macroprudential instruments in the toolkit. The Finnish Financial Supervisory Authority (FIN-FSA) was designated as the macroprudential authority in Finland, with close collaboration with the Bank of Finland (BoF) and Ministry of Finance (MoF). Systemic risk assessments are primarily undertaken by the BoF.

4. **Finland's national discretion on macroprudential policies is in part limited by EU-wide legislative framework as well as by the ECB's expanded mandate on macroprudential policies**. The 2013 CRDIV/CRR unifies prudential rules for banks and gives a new set of instruments to macroprudential authorities in European Union (EU). It also requires that EU member states establish designated and competent authorities that would be assigned the deployment of the tools contained in the CRDIV, although domestic macroprudential policy frameworks are much less harmonized within the EU legislation. The European Systemic Risk Board (ESRB) was established in 2010 for macroprudential oversight of the financial system within the EU. The ESRB can issue non-binding warning and recommendations. In addition, with the start of the Single Supervisory Mechanism (SSM) in 2014, the European Central Bank (ECB) was given a mandate for macroprudential policy to banks in the euro area with a power to top-up stringency of requirements

[1] Prepared by Chikako Baba (MCM).

for macroprudential instruments in the CRDIV/CRR. Therefore, macroprudential responsibilities are shared by the national authorities and EU or euro-area authorities.

5. **Furthermore, given strong regional interlinkages, macroprudential policy in Finland needs to be coordinated with Nordic countries**. Even though it does not have decision making powers, the Nordic-Baltic Macroprudential Forum, established in 2011, has served as a regular high-level discussion and exchange of information platform for central banks and supervisory authorities in Nordic and Baltic countries. The substantial financial and economic integration amongst Nordic countries implies considerable exposure through valuations of banks' foreign assets, as well as to potential withdrawals of foreign parent funding. Given the systemic importance of the foreign subsidiaries, this could have a severe impact on Finland's banking system and its economy. In addition, the largest bank, which is a subsidiary of a Swedish bank (Nordea) and has extensive cross-border exposure, will convert its operations in Finland into a branch. Branchification of the largest bank heightens the need for effective cross-border cooperation if the authorities are to retain sufficient ability to monitor and mitigate systemic risks.

6. **This technical note reviews the macroprudential framework in Finland and offers recommendations to strengthen it.** It contains four sections. The first section reviews the institutional framework, starting with an overview of domestic and international frameworks for macroprudential policy that apply to Finland, followed by an analysis of institutional arrangements for macroprudential policy at national and euro area levels, and a framework for coordination in the Nordic-Baltic region. The second section describes the framework for systemic risk monitoring. The third section studies different types of risks to the financial stability and the availability of macroprudential instruments to address the risks. The final section concludes with a set of recommendations.

INSTITUTIONAL ARRANGEMENTS

A. Macroprudential Framework and Responsibilities

7. **The Capital Requirements Directive and Regulation (CRDIV/CRR) establish a range of macroprudential policy tools at the European Union level, but other important tools remain at the discretion of the national authorities**. The CRDIV/CRR introduce, among others, the countercyclical capital buffer (CCB), the systemic risk buffer and capital surcharges for systemically important institutions. This opens up but also constraints the use of macroprudential policy tools, since, for some tools, the regulation imposes onerous procedures of notification and need for approval at the EU level. On the other hand, a range of macroprudential tools are outside of the scope of the current CRDIV/CRR, and under direct responsibilities of national authorities. This includes loan-to-value caps, debt-service-to-income caps, loan-to-deposit caps and margin and haircut requirements. These tools can be established and defined at the country level in addition to those contained in the CRDIV/CRR. In Finland, FIN-FSA is the designated and competent authority that is assigned the deployment of the tools contained in the CRDIV/CRR.

8. As a country participating in the Single Supervisory Mechanism (SSM), Finland shares the macroprudential responsibilities with the ECB. The SSM regulation provided the ECB with specific macroprudential powers for banks in the euro area. Country authorities have the power to initiate and implement macroprudential measures, subject to notification and coordination with the ECB. Moreover, the regulation provides the ECB with the power to apply more stringent requirements of any macroprudential instrument that is in the CRDIV/CRR, if deemed necessary ("top up" power).[2] This power does not extend to macroprudential measures outside of the CRDIV/CRR, for which the ECB can only issue instructions, but with no binding powers. In practice, the ECB engages in a dialogue with member states on the whole range of macroprudential tools being considered at the country level.

9. In addition, the European Systemic Risk Board (ESRB) is responsible for macroprudential oversight at the EU level. Its tasks include collecting data, identifying and analyzing systemic risks, issuing warnings where appropriate and cooperating closely with all other bodies within the European System of Financial Supervision (ESFS). The ESRB can issue non-binding warnings and recommendations for which a "comply or explain" procedure applies to country macroprudential authorities, establishing macroprudential mandates broader than those set out in the CRDIV/CRR. Its strong organizational link with the ECB ensures that its recommendations are consistent with those from the ECB. The ESRB monitors all macroprudential measures reported by country authorities.

10. There is significant collaboration on macroprudential policies in the Nordic-Baltic region, although the arrangement takes an informal form. Finland's financial linkages are particularly close with the Nordic countries. A recent study of linkages using equity market data suggests Finland is particularly closely integrated with Sweden and Denmark.[3] Against this background, Nordic and Baltic countries established a macroprudential forum for discussions and coordination. The Forum regularly discusses financial stability risks in the Nordic and Baltic area and specific countries, as well as macroprudential measures to address these risks. Its discussion also covered the coordination of the use of CCB and the use of reciprocity for macroprudential measures. However, it does not have legally binding power nor does it offer explicit recommendations to participating countries on macroprudential policy.

B. Domestic Macroprudential Framework in Finland

Willingness to Act: Mandate, Governance and Accountability

11. The Finnish Financial Supervisory Authority (FIN-FSA) is the designated macroprudential authority in Finland. The FIN-FSA is in charge of regulations and supervision of

[2] To date, the ECB has not made use of the top up power to any of its member countries.

[3] Brandão-Marques, Huston, and Piñon, "Nordic Linkages," IMF Working Paper, Forthcoming.

the financial sector, including insurance.[4] The Act on the FIN-FSA does not set out a formal macroprudential mandate for the FIN-FSA. However, the Act on Credit Institutions that provides for macroprudential measures in Finland assigns FIN-FSA as a supervisory authority of the Act[5], effectively giving the mandate to the FIN-FSA. In addition, the Act on the FIN-FSA provides the Board of the FIN-FSA with the decision-making responsibility on the use of macroprudential instruments in the Act on Credit Institutions and the CRR. This, on the other hand, restricts the scope of its power to the specific instruments outlined in the Act on Credit Institutions and the CRR (including structural and cyclical capital requirements, loan-to-collateral ratio), while leaving the responsibility for other possible instruments undefined. In practice, there is shared understanding in Finland that the FIN-FSA is responsible for macroprudential policy, in cooperation with the Bank of Finland (BoF) and the Ministry of Finance (MoF).[6]

12. **Broadening the mandate of macroprudential policy could foster the willingness and ability to act.** On the one hand, defining objectives for each policy instrument has benefits. It helps counter political influence and a bias toward inaction of specific measures, while guarding against the risk of abuse of macroprudential policy. On the other hand, the lack of a clearly-defined mandate for overall macroprudential policy can undermine the monitoring of new risks, and discourage the introduction of new instruments, for which no institution has an official responsibility. At the next revision of the Act on the FIN-FSA, its objectives and tasks as a macroprudential authority should be more clearly provided to strengthen the legal underpinning for a broader set of macroprudential policy instruments. For example, it can explicitly include "maintaining the stability of the financial system as a whole" as a primary objective (Chapter 1, Section 1), and provide for the power to make regulations to achieve this objective in its tasks (Chapter 1, Section 3: 12). The objective can further articulate the scope of responsibilities in both the time and structural dimensions.

13. **There is merit in strengthening macroprudential vis-à-vis microprudential objectives of the FIN-FSA**. Its objectives are formally defined in the FIN-FSA Act which focuses on its microprudential supervisory and market conduct regulator roles,[7] and its macroprudential objective ("ensuring the stability of the financial system as a whole") is mentioned as a part of its tasks.[8] The law does not further elaborate on the objectives for which the macroprudential policymaker is accountable. The greater emphases on microprudential objectives in the law potentially give rise to

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[4] The Financial Supervisory Authority (FIN-FSA) was established on January 1, 2009, following a merger of the former Financial Supervision Authority (functioned under Ministry of Finance until 1993 when its operations became connected to the BoF) and the Insurance Supervisory Authority (under the Ministry of Social Affairs and Health).

[5] Chapter 1, Section 3 of the Act on Credit Institutions.

[6] For example, the FIN-FSA and the BoF websites state clearly that the FIN-FSA is responsible for macroprudential supervision.

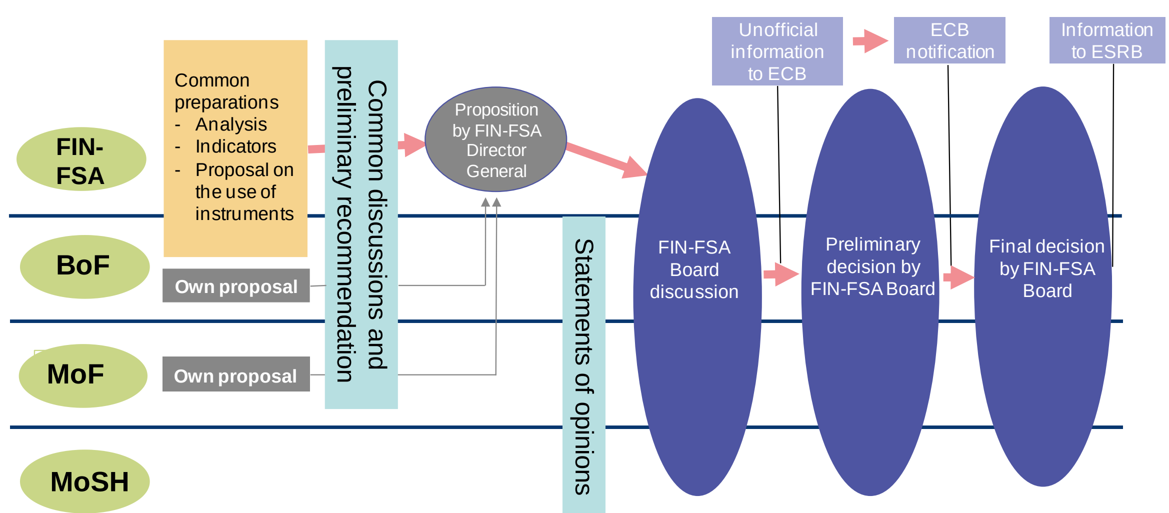
[7] That are: "ensuring financial stability and the smooth operation of the individual credit, insurance and pension institutions, and other supervised entities, so as to safeguard the interests of the insured and maintain confidence in the financial market" (Chapter 1, Section 1 of the Act on the FIN-FSA).

[8] Chapter 1, Section 3 of the Act on the FIN-FSA.

a risk that macroprudential objectives may not be sufficiently weighed in times of tension, which could be costly to the economy.[9] In practice, emergence of such risk appears to be mitigated by practical institutional arrangements, including the existence of resources fully dedicated to macroprudential policy at the FIN-FSA, a close collaboration with the BoF in systemic risk assessments, and consultations with the ECB during the decision making process. However, consideration could be given to define the hierarchy of the policy objectives in case of conflict.

14. The macroprudential decisions are made by the FIN-FSA's Board, after considering the proposal of FIN-FSA Director General (Figure 1). The board is comprised of representatives from the BoF, the MoF, and the Ministry of Social Affairs and Health (MoSH) [10] and two independent members, all of whom are appointed by the Parliamentary Supervisory Council. The board meets every quarter to discuss macroprudential issues. In addition, the BoF and MoF have a right to raise macroprudential issues and proposals to the FIN-FSA Board outside the normal quarterly meetings at their discretion. Ahead of the Board meeting, FIN-FSA, BoF and MoF staffs jointly prepare vulnerability analyses and preliminary recommendations. Based on them, the FIN-FSA's Director General makes a proposal on the implementation of macroprudential tools to the board. The BoF, the MoF and the MoSH will give their opinions on the proposal before the preliminary decision by the Board. The ECB is then consulted for an opinion on the preliminary decision, on the basis of which the final decision by the Board is made. The Board decides by consensus; if there is disagreement it can take a decision by majority voting.

Figure 1. Macroprudential Decision Making in Finland



Source: FIN-FSA.

[9] See Osinski, Seal and Hoogduin (2013) "Macroprudential and Microprudential Policies: Toward Cohabitation," IMF Staff Discussion Note 13/05.

[10] In principle. the board members do not formally represent their nominating organizations. In practice, however, the board works similarly to an interagency coordination platform, especially given the coordination at the technical level that takes place before the meetings.

15. The decision making structure appropriately entails multiple layers of reviews before decisions are made. Extensive preparation involving different agencies ensures a high-quality decision making process, where different points of view are taken into account. This is seen as desirable as the macroprudential tools may have a major impact on lending, the housing markets and the terms and conditions of housing loans.

16. Although the Board discusses key issues on a regular basis, the FIN-FSA can propose a broader agenda when justified by the risk analysis. The Board discusses the calibration of instruments set out in the Act on Credit Institutions regularly. Based on the risk assessments by the FIN-FSA and the BoF, other macroprudential issues can be brought to the Board. To date, the actual decisions do not go beyond the pre-defined set of instruments, but the Board has been discussing the introduction of higher risk weight rules to mortgage loans.

17. Several mechanisms exist to ensure transparency and accountability of macroprudential policy. The final decisions taken by the Board are published on the FIN-FSA website on the next day after the meeting, along with the opinions of relevant agencies respectively, and the decision proposal by the FIN-FSA Director General. The Macroprudential Reports, prepared by the BoF and the FIN-FSA for policy decisions, are published semi-annually. The BoF additionally publishes a financial stability report once a year, with short updates in-between, and regularly updates key indicators for systemic risks on the website. The FIN-FSA and BoF websites also have topics and papers to promote public awareness and understanding of macroprudential policy. More formally, the Parliamentary Ombudsman and the Chancellor of Justice assess the FIN-FSA's compliance with the law and its obligations in case a specific issue is raised by a person/institution. The Parliamentary Supervisory Council has administrative and supervisory responsibilities regarding the FIN-FSA, including appointments and suspension of the members of the Board and the Director General. At the international level, communication and consultation with the ECB and the ESRB assure the accountability.

Ability to Act: Powers and Resources

18. The FIN-FSA Board has decision making powers over certain instruments and can make informal recommendations. The Board can take decisions on certain macroprudential instruments as prescribed by the Act on Credit Institutions. These include both instruments requiring recurring decisions (such as calibration of countercyclical capital buffer and capital surcharges to systemic institutions) and instruments used at supervisory discretion (such as changes in loan-to-collateral limit). It also has power to designate systemic institutions and regularly update the list. The Board can also make recommendation to entities supervised by the FIN-FSA on macroprudential measures not approved by national law or regulations. For example, in 2010, the FIN-FSA Director General recommended that banks apply maximum loan-to-value of 90 percent to new housing loans and assess the borrower's repayment capacity with a maximum maturity of 25 years. Although such recommendations did not have a legally binding power, the authorities are of the view that banks mostly followed the recommendation.

19. The FIN-FSA has power to collect information from institutions and persons for macroprudential policy.[11] Specifically, the FIN-FSA can request information it needs for the exercise of its statutory duties from entities supervised by the FIN-FSA[12]; and it has the right to receive information relevant for its tasks from other financial market actors.[13] Although the FIN-FSA does not have legal access to information beyond those institutions or persons, the lists of institutions and persons appear sufficiently comprehensive for the conduct of macroprudential policy.

20. Although resources for macroprudential policy as a whole appear sufficient thanks to inter- and intra-agency collaboration, the FIN-FSA should expand its human resources for macroprudential policy. The FIN-FSA has only a few staff fully dedicated to macroprudential policy. The resource constraint is in part mitigated by flexibly allocating staff working on microprudential supervision to the macroprudential analysis on the ad hoc basis, especially for the analysis of structural systemic risks at the institution level. More importantly, the BoF has a high capacity and resources for financial stability risk analyses, and its inputs through the interagency cooperation help ensure sufficient quality and quantity of resources available for macroprudential policy at the national level. However, as a macroprudential authority, the FIN-FSA should have its own analytical capacity to complement the BoF's work.

C. Effective Coordination and Cooperation

Domestic Coordination

21. The FIN-FSA Board is a platform for coordination among relevant agencies for macroprudential policy. It has been chaired by the Deputy Governor of the BoF, since its creation in the current form in 2009. The Board includes representatives from the BoF, the MoF, and the MoSH.

- **The BoF is primarily responsible for the macroprudential analysis to support macroprudential decision making.** While not enshrined in formal agreement, in practice, the BoF conducts regular macroprudential analysis on systemic risks and vulnerabilities, and prepares quarterly Joint Macroprudential Report (in Finnish) with the FIN-FSA for the Board meetings.

- **The MoF and the MoSH are responsible for making proposals for amendments in legislation of the banking sector and the insurance sector, respectively**. In addition to the legislator role, the MoF also contributes to staff level discussions on macroprudential analysis and policy recommendations.

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[11] The Act on the FIN-FSA, Section 18.

[12] Supervised entities include: credit institutions, insurance companies, pension funds, investment fund companies and related custodians, investment companies, exchanges, settlement institutions, central securities depositories, central counterparties and payment institutions, related holding companies, deposit insurance fund, investor insurance fund, etc.

[13] For example, issuers of securities, clearing counterparties, insiders, etc.

- **The FIN-FSA Director General formulates a macroprudential decision proposal to the Board**, based on the discussion outcomes from a staff level committee involving the BoF, the MoF and the FIN-FSA.

22. Benefits of redefining the composition of the FIN-FSA Board to include the FIN-FSA Director General as a voting member could be studied. Officially, the FIN-FSA does not have a formal vote in the final decision making. However, the Director General physically participates in the Board discussion to present his/her proposals for macroprudential policy decisions, and is able to express his/her views that are subsequently separately published on the website. Considering the FIN-FSA's expertise and insights for macroprudential policy that will be built from the policy implementation, there may be a merit in having official representation from the FIN-FSA internal management in the macroprudential decision making. In such a case, because the FIN-FSA Board is structured as a fiduciary board whose main role is on oversight and organizational issues, an additional arrangement may be needed to distinguish the board's responsibilities for the executives of the FIN-FSA (Director General) and nonexecutives (the other board members).[14]

23. Consideration should be given to formalize the practice that the FIN-FSA Board is chaired by a member proposed by the BoF. In order to harness the expertise of the BoF in systemic risk and macroeconomic analyses, the assignment of the macroprudential mandate to a committee that is chaired by the BoF Governor or Deputy Governor appears desirable. Formalizing the chairmanship of the BoF representative in the macroprudential decision making committee helps support a strong role of the BoF in macroprudential policy, which in practice undertakes a large portion of macroprudential policy analysis.

24. At a more informal level, a staff level committee facilitates interagency coordination. The committee ("Macroprudential Group") involves staffs from the FIN-FSA, the BoF and the MoF. Prior to the FIN-FSA Board meetings, the FIN-FSA and the BoF jointly conduct risk assessments. The MoF is consulted in the preparation for the preliminary proposal to the FIN-FSA board decision. The discussion outcome from the committee is submitted to the Director General of the FIN-FSA, who subsequently formulates a decision proposal to the Board.

25. Formalizing the interagency coordination in macroprudential policy making process will further enhance the collaboration. Although the law requires a cooperation of the FIN-FSA with the BoF and the MoF in macroprudential policy, a cooperation framework is not explicitly set out in a written form. This, in turn, reduces the clarity of the official role and responsibility of the BoF in macroprudential policy, while in practice it plays a primary role both in systemic risk analyses and policy formulation. In this context, the division of responsibilities on macroprudential policy should be clarified through a memorandum of understanding (MOU) regarding the cooperation among relevant authorities, and more informally, by publishing a document summarizing the official policy framework and strategy for macroprudential policy. In the longer term, as experience on

[14] See Khan (2016) "Central Bank Governance and the Role of Nonfinancial Risk Management", IMF Working Paper No. 16/34, in particular Section II. Many issues for central bank governance and the board effectiveness are analogous to those for the FIN-FSA.

macroprudential policy builds over time, the authorities may wish to periodically re-evaluate the domestic coordination framework, including by examining the case for assigning a formal macroprudential mandate to the BoF, especially in case the FIN-FSA continues to face a resource constraint.

European Coordination and Cooperation

26. The Finnish authorities regularly communicate with the ECB, in particular for quarterly macroprudential decision makings in Finland and for the systemic risk assessments by the ECB.

- As set out in the SSM Regulation, prior to the FIN-FSA Board's quarterly decisions on the use of macroprudential instruments, the FIN-FSA makes the official notification of the intended policy decisions to the ECB ten working days prior to making the final decisions, to which the ECB has an option to object within five working days. In practice, the ECB is informed about the FIN-FSA Board's discussion at an early stage in the decision making process (Figure 1).

- The ECB conducts regular assessments of systemic risks and needs for macroprudential policy for the Macroprudential Forum of the ECB Governing Council and Supervisory Board. This assessment covers the SSM area countries and their country specific systemic risks and needs for macroprudential policy actions. Prior to the Macroprudential Forum meetings, the assessments are discussed both in the ECB Financial Stability Committee (and its substructures) and in bilateral dialogues with the national authorities. The bilateral dialogue involves information and data exchange, written comments on the ECB draft assessments or informal discussions among staffs.

27. The dialogue with the ESRB mainly takes place through the quarterly process of preparations for its General Board, Advisory Technical Committee, and subgroup meetings, where country specific systemic risks and macroprudential policy assessments are discussed. This is complemented through informal dialogue. The dialogues with the ECB and the ESRB are interlinked, because of the close organizational link between the ECB and the ESRB, and the reference to the ECB systemic risk analyses in the ESRB assessments.

28. The ESRB also facilitates the cross-border coordination of macroprudential policy among the EU member states. In addition to the mandatory reciprocity for the CCB under Basel III up to a certain level, the ESRB has recommended reciprocation of all macroprudential policy measures by other member states. These include both the measures under the CRR/CRDIV and measures outside of their scope. A member state can request reciprocation of the measure through the ESRB, allowing more effective arrangements for notifying and reciprocating macroprudential measures within the EU. The ESRB also recommended *ex ante* and *ex post* assessments of cross-border effects of the national macroprudential policies.

Nordic-Baltic Cooperation

29. In view of significant cross-border effects of systemic risks, Finland is actively involved in Nordic-Baltic collaboration on macroprudential issues. Both the FIN-FSA and the BoF participate in the Nordic and Baltic Macroprudential Forum for discussion. Although the outputs from the Forum are not publicly available, the working groups and streams for the Forum produce various internal reports on specific topics, such as countries' experiences with the use of the CCB, and reciprocity arrangements. These reports are used as a basis for high-level discussion in the semi-annual meetings, which facilitate sharing of experiences in macroprudential analysis and common understanding of financial stability risks in the region.

30. Formal arrangements for the coordination and cooperation are still evolving. Although the Forum promotes discussion based on participating countries' experiences, it does not have hard or soft powers to macroprudential policy in the participating countries, nor does it require supervisory information sharing for macroprudential policy. This is in contrast to the cooperation for crisis management, for which there is an MoU among Nordic countries.[15]

31. The authorities should seek to further strengthen the regional cooperation arrangement. Due to strong interlinkages, it is desirable for macroprudential policy in each country to pay close attention to financial cycles and structural developments in the other countries in the region. The conversion of the legal structure of a systemic Swedish bank in Finland to a branch have highlighted the importance as well as the need for close cooperation between home and host supervisors to monitor and address vulnerabilities of a systemic institution. In light of these developments, strengthening a cooperation arrangement among Nordic countries would be desirable. The authorities have indeed started a discussion with other Nordic countries on an MoU involving enhanced data sharing. This should involve supervisory data sharing, covering direct and indirect cross-border exposure information for the financial sector, and joint stress testing exercises. Consideration could be given to issuing recommendations or guidance based on the findings from the joint stress tests.

SYSTEMIC RISK MONITORING

32. Macroprudential policy decisions in Finland are based on several indicators and judgment. Quarterly Macroprudential Reports used as a background to the policy decision summarize developments in the monitoring indicators. It typically includes not only signals from key indicators (typically credit-to-GDP gap), but also other complementary data and qualitative information. Such an approach of avoiding the mechanical application of indicators is in line with international practices and the IMF recommendation.

[15] This MoU, however, predates the Banking Union and the new framework for bank recovery and resolution.

33. The BoF uses multiple indicators and methodologies to assess developments of systemic risks at an early stage, resilience of the system, policy calibration, and policy evaluation.

- The identification of systemic risks starts from the assessments of various indicators that are considered as leading indicators of stress in domestic, Nordic and international financial system. Main indicators and models, such early warning models and heatmaps, are updated regularly to assess developments of systemic risks with a forward-looking way and resilience of the financial system.

- In addition, scenario analyses and stress tests using in-house models are applied to identify the resilience and potential impacts of risks, together with the FIN-FSA. Risk scenarios including excessive cyclicality in the real estate sector and stress in the financial market are analyzed with an autoregressive model, to assess their impacts to the real economy and financial sector losses. Stress tests are routinely applied to assess the solvency and liquidity risks of the banking sector and the payment system.

- Other models are used to complement general assessments, analyze specific issues, and calibrate macroprudential instruments. For example, a dynamic stochastic general equilibrium (DSGE) model is developed to assess macro-financial impacts and intertemporal tradeoff of the CCB. Network and contagion models are applied to assess risks from the domestic and regional financial interconnectedness.

34. The FIN-FSA is responsible for institutional level analysis. The FIN-FSA collects quarterly data from large deposit taking banks on their bilateral exposures on the largest counterparties, which are used in the stress tests to assess the banks' and the Finish financial market's sensitivity to micro and macroeconomic shocks. The quarterly reporting of bilateral exposures will be expanded to insurance companies from 2016 as Solvency II comes into effect, while pension funds, investment firms or other financial institutions are not subject to the reporting requirements.

35. Despite generally good coverage of systemic issues, the presentation of financial stability analysis has room for improvement. The overview of financial stability is published annually by the BoF.[16] The report collects articles analyzing systemic risks from various angles. While the depth and variety of the thematic assessments in the report are commendable, they can be complemented by more holistic macro-financial linkages analysis, including the domestic and external outlook and its linkage with risks in different segments of the financial sector. A broad overview of macro and financial developments will mitigate chances of missing systemic risks through the cracks of thematic analysis.

36. There are important data gaps especially related to the household sector. The primary data gaps relate to granular information on credit to households and corporate sectors, whose indebtedness is currently at a historic high at the aggregate level. Granular information of the loan

[16] May issue of Bank of Finland Bulletin.

profiles would help identify risks that are not visible from the aggregate numbers, calibrate macroprudential measures effectively targeting specific risks, and monitor their effectiveness. The corporate loan information will be collected from 2018 under the ECB's initiative to create a new analytical credit dataset (*AnaCredit*). However, the gap will remain for the household sector data, unless the ECB later decides to extend the coverage of *AnaCredit* to the household loans, which is not envisaged for the first round.

37. A loan registry system should be created to enable monitoring of household indebtedness at a disaggregated level. There is a privately operated credit bureau in Finland, but it provides information only on bad credits. Starting in September 2016, the FIN-FSA requires banks to report the loan-to-value and loan-to-collateral[17] ratios for new household loans at the individual loan level. However, the reporting only covers new loans without detailed information on the borrower profiles. Hence, granular data on the entire stock of household loans with borrower information (including, for example, income and other debt obligations) remains missing. The authorities should start creating a loan registry system to fill the data gap.

38. To approximate systemic risks, the Finnish authorities will need access to information on domestically important foreign branches through the home supervisor and supervisory colleges. Supervisory colleges have been established for all banks which have domestically important branches in Finland. The FIN-FSA participates generally in the college work as a host supervisor, and in case of significant institutions together with the ECB. Currently, deposit taking foreign branches account for five percent of total banking sector deposits in Finland, with two Swedish banks' branches each representing two percent of deposits.[18] The Swedish supervisor shares relevant group level supervisory information, including risk assessments for these institutions, with the FIN-FSA. When the conversion of Nordea's subsidiary in Finland into a branch of its Swedish parent takes place, the importance of supervisory colleges would rise as a platform for micro and macroprudential supervisory information sharing and risk assessments. It is important to ensure that the Finnish authorities have full membership and access to full supervisory information as a host supervisor.

SYSTEMIC RISKS AND MACROPRUDENTIAL INSTRUMENTS

39. This section presents an overview of macroprudential instruments that have been identified to address different types of systemic risks. Systemic vulnerabilities are assessed based on developments in multiple signaling indicators, following an approach suggested by the IMF (2014). The selection of the indicators greatly overlaps with the one used by the Finnish authorities in their macroprudential analysis. Each section also assesses the effectiveness of relevant

[17] As explained later, the loan-to-collateral ratio is defined as a loan size relative to the collateral securities, including the value of the house to be purchased.

[18] The number would increase significantly in case the largest bank (Nordea) transforms its Finnish operations into a branch.

instruments for activities by foreign bank branches, and possible arrangements to address cross-border leakages if applicable.

40. In Finland, there is a need to ensure that the macroprudential toolkit covers sufficiently broad instruments. A set of macroprudential instruments available for the FIN-FSA Board is pre-defined in the legislation (Table 2). Introducing new instruments could face a major hurdle as it would entail new legislation. It is therefore important to broaden the toolkit as much as possible, even if they are not activated immediately, for precautionary reasons.

Table 2. Macroprudential Instruments and Current Calibration in Finland

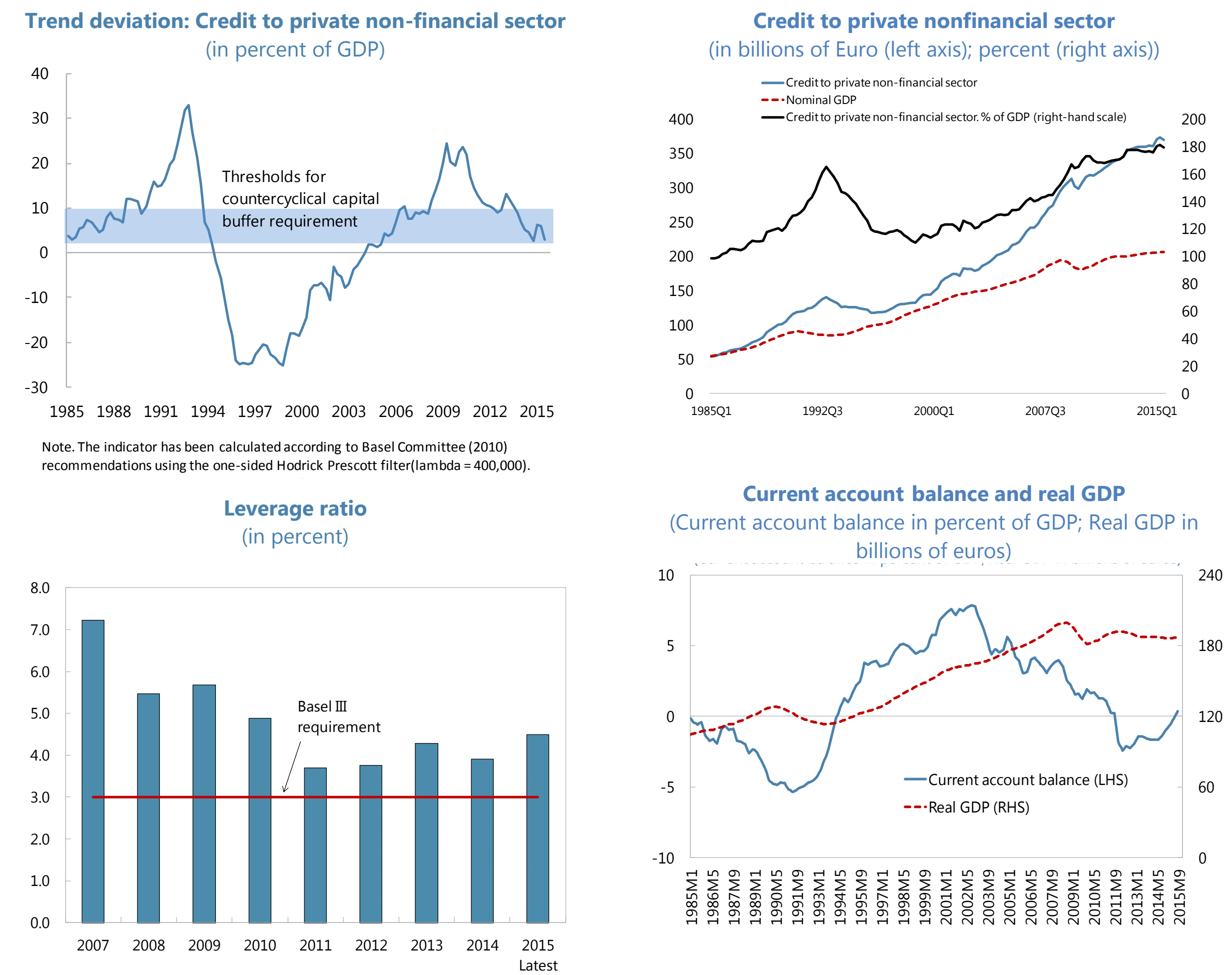
Broad based tool	
Countercyclical capital buffer (up to 2.5 percent)	Set at 0%
Housing market tools	
Maximum loan-to-collateral ratio	90 percent from July 2016
Additional risk weights for mortgage loans	Under discussion
Liquidity tools	
Liquidity Coverage Ratio	Being phased in
Net Stable Funding Ratio	Planned for 2018
Structural tools	
Capital conservation buffer	2.5 percent from January 2015
O-SII buffer	0.5-2 percent from January 2016

A. Vulnerabilities from Broad-Based Credit Booms

41. Indicators for credit cycle in Finland show a mixed picture (Figure 2). The credit-to-GDP gap has remained above the 2 percent lower threshold for activating a countercyclical capital buffer (CCB) in the Basel Committee on Banking Supervision (BCBS) guidance. This is driven largely by the decline in nominal GDP growth, and the rate of credit growth has mostly remained between 0-5 percent since 2011. Most recently, the credit gap from the long-term trend is declining due to slowing credit growth. Other indicators also point to benign credit conditions: House prices relative to income or rent do not show large deviations from their long-term trends, and household's debt servicing ratio continues to drop thanks to low interest rates. The leverage ratio[19] has remained above the minimum of three percent and has been improving recently, and reliance on wholesale funding, which typically rises during credit booms, is declining. Finally, current account imbalances, which often deteriorate before financial crises, are not expanding along with credit.

[19] The Basel III leverage ratio is defined as the Tier 1 capital divided by the total exposure including the off-balance sheet items. The Basel III framework introduces a minimum ratio of three percent.

Figure 2. Finland: Broad Credit Conditions



Source: Bank of Finland, Statistics Finland, and staff calculation.

42. The Basel III Countercyclical Capital Buffer (CCB) is the main broad-based instrument, which is not currently activated based on the assessment of broad credit conditions. The law[20] requires that the FIN-FSA decide the imposition of the CCB (0-2.5 percent) every quarter, in cooperation with the MoF and the BoF based on developments in a credit-to-GDP gap and other complementary information. Conditions for the calibration of the CCB are specified in the MoF Decree.[21] Since the introduction of the CCB framework in January 2015, the FIN-FSA has not imposed a positive buffer requirement, based on its assessments of the credit cycle. The ECB, who has a top-up power to the FIN-FSA's decision, has not imposed an additional requirement, either.

43. The guided discretion on the activation of the CCB appears appropriate. In light of the statistical caveat in the credit gap calculation, including its backward-looking nature and sensitivity

[20] The Act on Credit Institutions, Chapter 10, Sections 4-6.

[21] MoF Decree 1029/2014.

to new data (see for example IMF, 2014), the credit gap should not be used mechanically. As previously discussed, the BoF and the FIN-FSA should continue to complement the credit gap estimates with more granular data and surveillance, and their forward-looking estimates. Against the current background of the slow economic growth and the lack of investment opportunities, it appears appropriate to keep the CCB at zero percent.

44. The Finnish authorities also monitor the leverage ratio, although they do not have powers to impose a limit on it yet. Under the Basel III framework, the implementation of the leverage ratio began in 2013 with bank-level reporting to national supervisory. The Basel III leverage ratio is expected to become a requirement from 2018. The Finnish authorities plan to coordinate the process with other European countries.

45. Broad-based instruments are subject to cross-border regulatory arbitrage risks, while the risks are mitigated for CCB by reciprocity arrangements. Capital requirements like the CCB may lead to arbitrage where loans are provided by institutions not covered by the tool, including lending by foreign banks through their branches (IMF, 2014). In light of large interconnectedness, it is important to have appropriate reciprocity arrangements for the CCB, where each country authority is responsible for ensuring that the banks they supervise apply the CCB on exposures in the host jurisdiction that has imposed the CCB. The Finnish legislation provides for the CCB requirement of up to 2.5 percent, for which mandatory reciprocity arrangement exists under the Basel III and EU rules. Even in case a host country of a Finnish bank's branch imposes a CCB exceeding 2.5 percent, the maximum in the Finnish legislation, the regulation allows its recognition by Finland for the full amount. Two countries in the Nordic region currently impose a positive CCB requirement (Table 3).

Table 3. Current Settings for Countercyclical Capital Buffer by Nordic Countries

Country	CCB rate
Finland	0 percent
Denmark	0 percent
Norway	1.5 percent (raised in June 2016 from 1 percent)
Sweden	1.5 percent (raised in June 2016 from 1 percent)

Source: National authorities.

B. Vulnerabilities from Corporate Sector

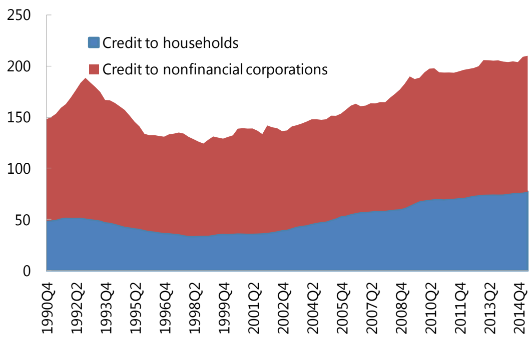
46. The financial sector's exposure to corporate sector does not appear excessively high at current juncture (Figure 3). Financing for nonfinancial corporations is diversified, with banks financing more than 24 percent of their borrowing. Credit to nonfinancial corporations has risen to 105 percent of GDP in 2015, from 85 percent prior to the GFC, while this level is still below the peak of Nordic crisis in the early 1990s. The share of corporate credit in total credit has remained stable around 65 percent since mid-2000s. There are, however, some signs of vulnerabilities, for example, bankruptcy applications in early 2016 are about 15 percent higher than the pre-2009 crisis level.

47. There are a number of potential vulnerabilities from the corporate sector, and the authorities need to remain vigilant. Reflecting the diversified funding sources, in particular, for large corporations, the indebtedness of the corporate sector and its spillover impact to the domestic financial system is difficult to monitor. However, in light of some signs of vulnerabilities, including persistently high bankruptcy applications, monitoring of the quality and trends in loans to corporate sector remains important. Progress in the use of European level loan database (*AnaCredit*) will be important step forward in reducing the data gap in this area.

Figure 3. Credit to Corporate Sector

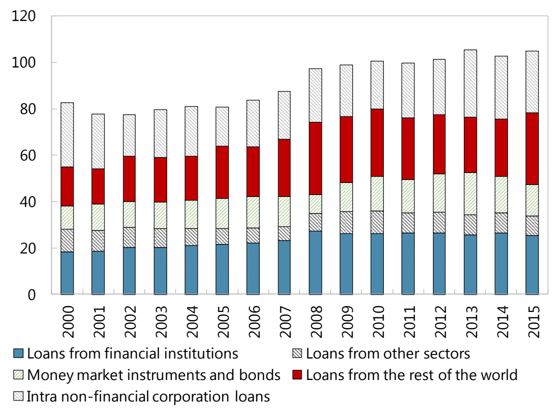
Credit Developments by Sector

(In percent of GDP)



Non-Financial Corporations Debt

(In percent of GDP)



Sources: Bank of Finland, Statistics Finland, BIS and staff calculation

C. Vulnerabilities from Housing and Household Sector

48. House prices do not show acute signs of stress under current conditions, although this could change under some scenarios (Figure 4). After rising rapidly between 1995 and 2008, house prices have broadly stabilized, including in the capital city region where the price had risen fastest. When benchmarked against rents and wages, housing prices do not seem out of line with historical averages, suggesting at most a moderate overvaluation. A comparison to the peer countries does not show excessive house price increases in Finland either, although caution is needed to interpret this finding because house price overvaluation is being pointed out in some peer countries. Moreover, given the significant increase in household debt in recent years, a scenario of less-than-expected growth and further increase in unemployment, or a large increase in interest rates, would likely reduce house prices. A survey by the FIN-FSA in 2012 showed that a sizable portion of new housing loans carry a loan-to-value ratio exceeding 90 percent, suggesting the sensitivity of risks to house prices as a collateral.

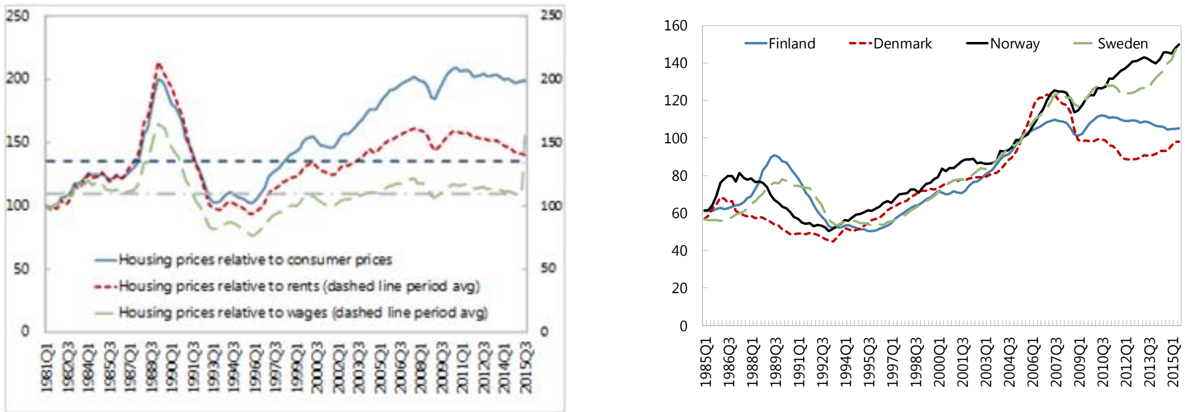
Figure 4. Housing Prices

House prices 1981–2015

(1981Q1=100)

Real house price developments

(2005=100)



Source: Bank of Finland.

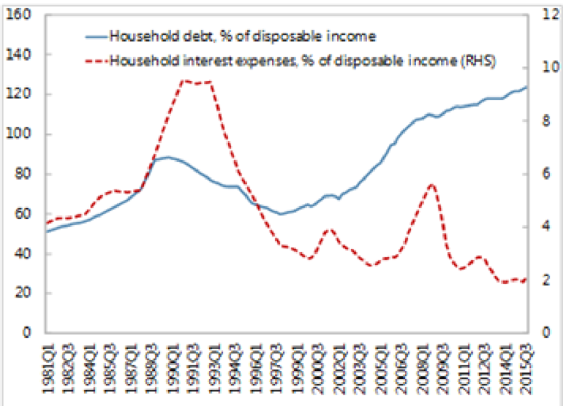
Source: International House Price Database

49. Increasing household indebtedness is a concern. Household debt has risen to the highest level to 123 percent of disposable income (65 percent of GDP), though it remains in line with the OECD median and about the average in EU (Figure 5). Most household loans (95 percent) are tied to variable interest rates. Benefitting from pass-through of low interest rates in the Euro Area, Finnish banks offer the lowest interest for mortgage loans among euro area countries, and households' interest expenses have fallen to a historic low in recent years. On the other hand, the household debt sustainability is highly dependent on the developments in the interest rates. So far, with most mortgage loans carrying floating interest rates, debt service payments have declined. However, under a scenario with higher interest rates, the higher debt service burden may result in significant payments difficulties.

Figure 5. Credit to Household Sector

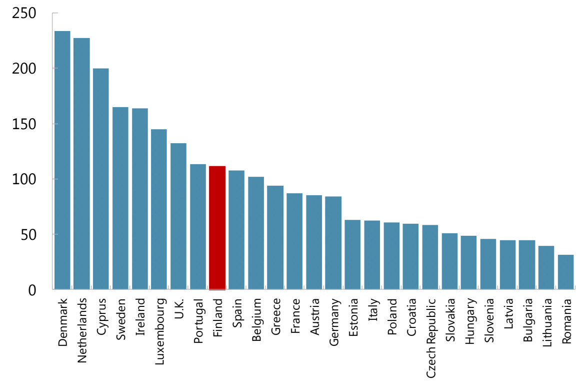
Household indebtedness and interest rate burden

(1981Q1=100)



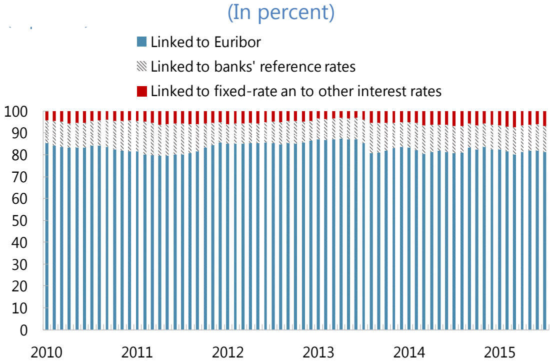
Household Debt-to-Gross Disposable Income Ratio in EU

(In percent; as of 2015Q2 or latest)



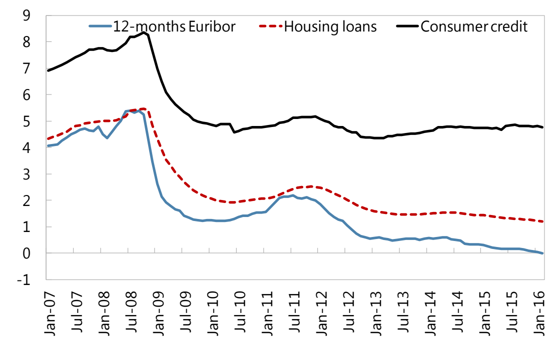
New lending to households by interest rate linkages

(In percent)

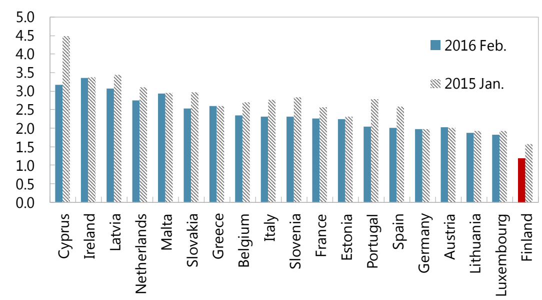


Interest rates on Household Loans

(Percent)



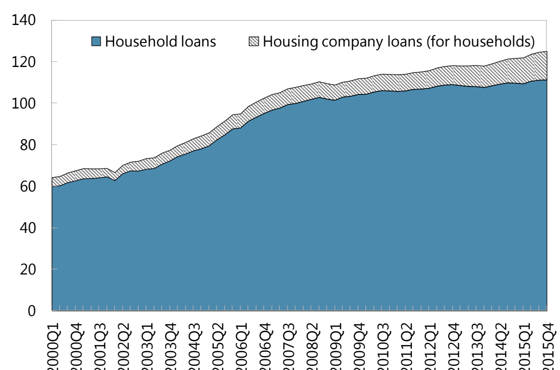
Euro Area: Cost of borrowing from MFIs for household mortgage (in percent)



Source: ECB.
Notes: The cost of borrowing from MFIs is calculated as the weighted average of rates on short-term (i.e. initial period of interest rate fixation up to one year) and long-term (i.e. initial period of interest rate fixation over one year) MFI loans, weighted by the volumes of new business (smoothed by the moving average of the previous two years).

Household indebtedness

(In percent of annual disposable income)



Sources: Bank of Finland, Statistics Finland, ECB, European Commission, and staff calculation.

50. With recognition of heightened vulnerabilities in the household sector, multiple macroprudential instruments and other measures are being implemented to contain risks arising from housing loans.

- **A maximum loan-to-collateral (LTC) ratio for housing loans became effective from July 2016.** The cap of 90 percent was initially introduced in March 2010 as a non-binding recommendation to banks,[22] and applied to the loan-to-value (LTV) ratio that is calculated as a loan size relative to the price of house to be purchased. Starting in 2016, the binding limit is imposed on the LTC ratio that is defined relative to the current value of the collateral securities, allowing more flexibility for households to satisfy the limit. The LTC limit will be initially set at 90 percent (95 percent for first home buyers).[23] The FIN-FSA may lower the limit by a maximum of 10 percentage points and/or change the definition of accepted collateral, to contain buildup of risks in the household sector, such as overheating in the housing market, growth in household indebtedness, and banks' excessive exposure to household loans during a housing boom.

- **A discussion is underway to raise the risk weights on housing loans.** Under the CRDIV/CRR framework, the FIN-FSA Board may set a higher capital requirement for loans secured by residential and commercial real estate property. At the same time, national authorities' discretion in adjusting risk weights are a limited discretion under the CRDIV/CRR framework. Hence, the authorities are studying the advantages and disadvantages of using different CRDIV/CRR articles.[24] In December 2015, the FIN-FSA Board announced its decision to start preparing for setting higher risk weights on housing loans, noting potential vulnerabilities in indebted households under stressed conditions and effects on the consumer behavior. In June 2016. it announced the introduction of a minimum level of 10 percent for the average risk weight on housing loans of banks that have adopted the Internal Ratings Based Approach. The minimum level would come into force on July 1, 2017 at the latest. Raising risk weights on housing loans appears appropriate, given the vulnerabilities, and its effectiveness should be ensured by reciprocity agreements for foreign bank branches.

- **FIN-FSA also issued non-binding recommendation for banks in 2010 to assess debt-servicing capacity of borrowers under a stressed scenario before granting loans**. Specifically, it recommended that the debt servicing capacity is assessed with an interest rate of 6 percent (instead of prevailing lending rate that is currently around 1.2 percent) and with the maximum amortization period of 25 years. There is no indicative threshold for the debt-service-to-disposable income ratio.

- **The tax deductibility of mortgage interest payments is gradually reduced.** The policy is not implemented specifically with macroprudential objectives, but it will directly influence the

[22] As discussed earlier, although the recommendation was non-binding, it appears that banks have followed the recommendation.

[23] The Act on Credit Institutions, Chapter 15, Section 11.

[24] The options are the CRR Articles 124 and 164, the CRR Article 458, or Pillar 2 requirements.

household's incentive to borrow. The plan is to gradually reduce the share of tax-deductible interest payments from 65percent in 2015 to 25 percent in 2019.

51. The calibration and definition of the LTC limit should be reviewed once detailed information becomes available. The level of the LTC cap is similar to the LTV caps used in the other countries in Europe (Table 4). However, considering that LTC ratio allows additional collaterals to be included in the calculation, (i) its effectiveness in mitigating housing market booms may be undermined, and (ii) an economically binding limit for the LTC ratio would need to be assessed based on the data from the Finnish financial sector. Although the reporting requirement for LTV and LTC ratios from September 2016 only applies to a flow of new loans, it could be complemented with information on bad loans from the credit bureaus. Using a combination of information, the authorities should assess whether applying limit as a LTC cap (instead of LTV) is appropriate, and whether the maximum margin that the FIN-FSA may reduce for macroprudential purposes (10 percentage points) is sufficient.

Table 4. Loan-to-Value Limits for Residential Mortgage Lending in Europe

Country	LTV limit
Netherlands	From 106 percent (2012) to 100 percent (2018)
Slovakia	100 percent
Denmark	95 percent
Poland	95 percent (lowered to 80 percent by 2017)
Finland	90 percent (95 percent for first time buyers)
Latvia	90 percent (95 percent with a guarantee)
Estonia	85 percent (90 percent with a guarantee)
Lithuania	85 percent
Norway	85 percent
Sweden	85 percent
Ireland	80 percent (a sliding limit starting at 90 percent for first time buyers; 70 percent for buy-to-let housing)
Luxembourg	80 percent
Malta	70 percent
Cyprus	70 percent (80 percent for owner-occupied mortgage)
Romania	60-85 percent
Hungary	35-80 percent

Source: ESRB (2015) "A Review of Macro-Prudential Policy in the EU – One Year After the Introduction of the CRD/CRR"

52. The toolkit should be broadened to include tools based on the terms of loans and borrower eligibility. Instruments constraining the availability of credit to households based on the terms of loans (such as limits on loan amortization period or maturity) or borrower profiles (such as caps on LTV, LTI or debt-service-to-income (DSTI) ratios) can be applied to all products offered by financial institutions within a country, including foreign branches. The presence of large foreign banks in Finnish financial system justifies a wider use of instruments based on the terms of loans to reduce the scope for cross-border leakages of macroprudential policy on the housing sector. Many EU member countries and Nordic countries have introduced these limits (Tables 5 and 6). International experiences also support the effectiveness of the interlocking use of these measures in moderating excessive credit cycle and house price inflation (IMF, 2014).[25] As the introduction of the DSTI will require a creation of loan registry system that captures all debt owned by the household, the authorities should first introduce a maximum limit on LTI ratio, and subsequently replace it with or add a maximum limit on DSTI ratio. To avoid the circumvention of the limit by extending the loan maturity, a maximum limit on the loan maturity should be introduced as well.

Table 5. Measures Related to the Household and Housing Sector in EU

Measures	Countries
LTI limit	Ireland, Poland, United Kingdom
DSTI limit (covering more than the housing sector)	Estonia, Cyprus, Lithuania, Hungary, Poland
Stress test	Ireland, Cyprus, Luxembourg, Slovakia, United Kingdom
Loan maturity limit	Estonia, Lithuania, Netherlands, Slovakia
Loan amortization limit	Denmark, Netherlands, Slovakia, Sweden

Source: ESRB (2015) "A Review of Macro-Prudential Policy in the EU – One Year After the Introduction of the CRD/CRR"

[25] For example, a cap on LTV may become less binding and lose effectiveness with the increase of house prices, while caps on LTI or DSTI ratios become more binding when house prices grow faster than household's disposable income.

Table 6. Household and Housing Sector Measures in the Nordic Region

	Finland	Sweden	Norway	Denmark
Loan-to-value cap	90 percent	85 percent	85 percent	95 percent
Debt-service-to-income cap	n/a	n/a	n/a	n/a
Sector specific risk weight	Risk weight floor of 10 percent (effective July 2017)	Risk weight floor of 25 percent	LGD floor 20 percent	
Amortization requirements	n/a	2 percent per year for new mortgage loans with LTV>70 percent; 1 percent for LTV > 50 percent (proposal under discussion)	2.5 percent per year for LTV > 70 percent	n/a
Maximum loan maturity	25 years (recommendation)			
Other	• Use of a stressed interest rate in the debt-servicing capacity assessment (recommendation) • Reducing the tax deductibility of interest payments			Limit on the share of interest only loans with LTV > 70 percent

Source: ESRB and national authorities.

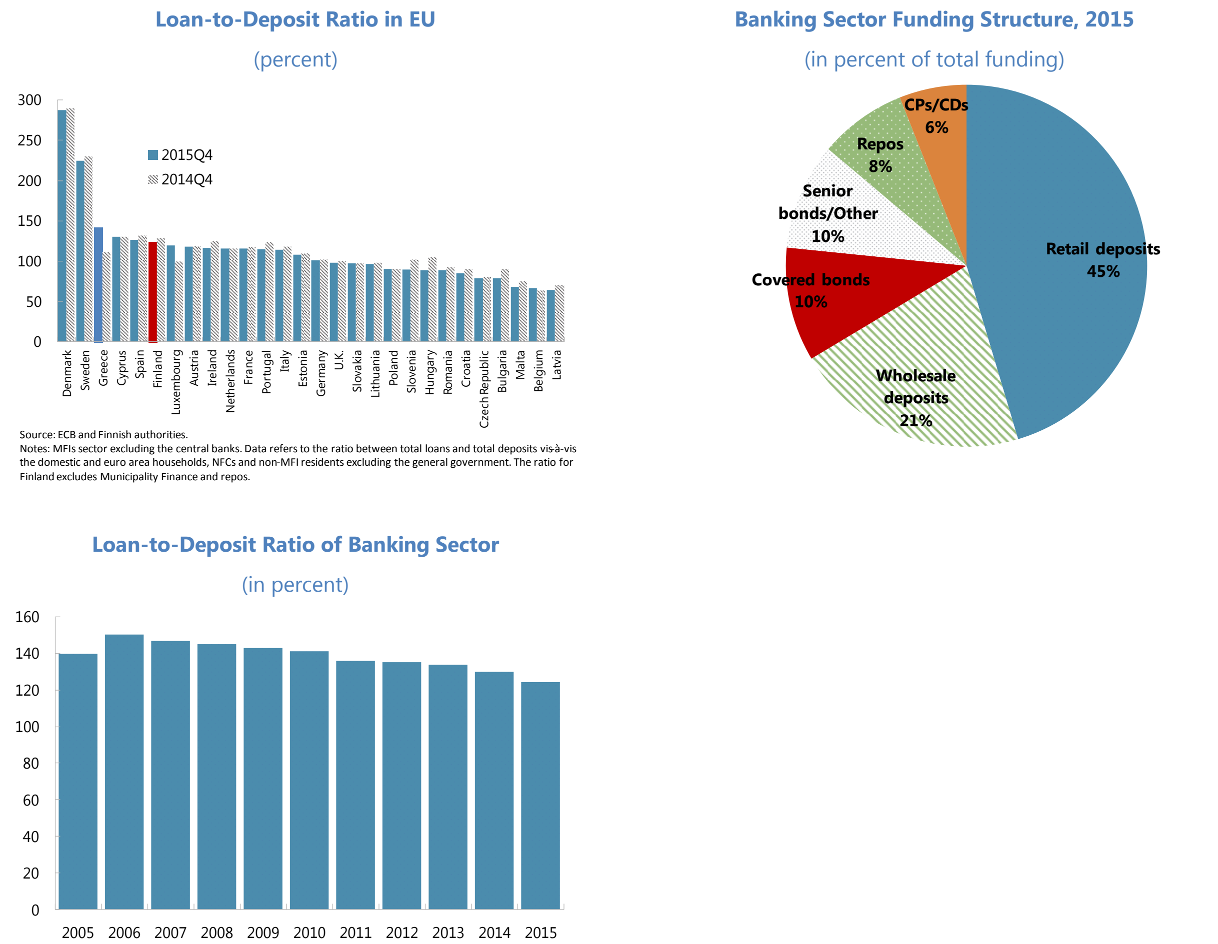
D. Vulnerabilities from Funding and Liquidity

53. **The Finnish banking sector is structurally reliant on wholesale funding, although there are no immediate signs of liquidity risks**. At around 124 percent in 2015, the loan-to-deposit ratio in Finland is among the highest in the EU. More than a half of bank funding depends on wholesale sources, including covered bonds, unsecured debt instruments, and deposits from credit institutions.

However, the Net Stable Funding Ratio (NSFR) of 114 percent for the three largest banks is comfortably above 100 percent, suggesting liquidity risks are limited, although the aggregate figure might hide vulnerabilities at the individual level.

54. Against the background of limited investment opportunities, banks have improved their funding structure to rely more on deposits. The loan-to-deposit ratio has been on a declining trend since 2006. However, banks' efforts to attract more retail deposits will become more difficult without harming their profitability, under the environment with low interest rates and a compressed margin.

Figure 6. Finland: Liquidity Conditions



Source: Bank of Finland, FIN-FSA, ECB, and staff calculation.

55. The implementation of the Basel III liquidity tools follows the schedule set out in the CRR. The Liquidity Coverage Ratio (LCR) is being phased-in from October 2015, and the introduction of the Net Stable Funding Ratio (NSFR) is planned for 2018. While the FIN-FSA may require tighter liquidity limits on top of the CRR requirements for macroprudential reasons (by virtue of Article 458 of the CRR), no additional requirements are planned currently. Complementing these tools, the authorities regularly undertake liquidity stress tests, which should be continued with fully taking into account liquidity and funding risks.

56. The authorities should seek to ensure that sufficient euro liquidity for systemic foreign branches is held at the group level. Once a bank of other EU member states changes its legal structure from a subsidiary to a branch, the application of liquidity requirements for the branch is constrained according to EU rules. In such a case, it is important to discuss with the home country supervisors ways to ensure that the bank maintains sufficient level of liquidity, in particular, in euro at the group level. In addition, given high integration in the Nordic region that can facilitate a contagion of a liquidity shock, the authorities may consider harmonizing liquidity requirements in the region to reduce the cost of compliance for banks and avoid potential concentration of funding risks in one country where liquidity requirements are weak.

E. Vulnerabilities in Structural Dimension

57. The financial system in Finland is highly concentrated and dominated by a few banks. Total assets of banks and non-deposit taking credit institutions were around 246 percent of GDP in 2015. Banks are the dominant form of financing for the economy, particularly for households, and banking sector assets amount to 230 percent of GDP (from 200 percent at end-2009). One bank (Nordea) accounts for two thirds of total bank assets and the top four banks for over 90 percent, two of which are subsidiaries of foreign banks (Nordea and Danske). A large number of small cooperative banks are part of the OP group, Finland's second largest banking group.

58. A few banks are considered systemic credit institutions in Finland. The FIN-FSA assesses all credit institutions to identify institutions significant for the financial system in Finland and in the EU (Other Systemically Important Institutions, O-SIIs).[26] The four main criteria are size, importance (lack of substitutability), interconnectedness, and complexity/cross-border activities (Table 7). The criteria and indicators are chosen in accordance with the guidance from the European Banking Authority (EBA). The calculation of the O-SII scores for all credit institutions by the FIN-FSA in 2016 (with the data as of end-2015) finds O-SII scores for four banks exceed the lowest threshold of 3.5 percent (See Table 8).

[26] The concept of the O-SII resembles to the domestic significant financial institutions in non-EU countries, except it considers the significance beyond the national border within the EU.

Table 7. Finland: Criteria for Assessing Systemic Importance

Criterion	Indicators	Weight
Size	Total assets	25 percent
Importance	Value of domestic payment transactions	8.33 percent
	Private sector deposits from depositors in the EU	8.33 percent
	Private sector loans to recipients in the EU	8.33 percent
Interconnectedness	Intra-financial system liabilities	8.33 percent
	Intra-financial system assets	8.33 percent
	Outstanding debt securities	8.33 percent
Complexity and Cross-border activity	Value of national OTC derivatives	8.33 percent
	Cross-border liabilities	8.33 percent
	Cross-border claims	8.33 percent

Table 8. Finland: O-SII Scores and Buffers

Credit institution (consolidated)	O-SII score	O-SII buffer
Nordea Bank Finland Plc	61.21%	2.0%
OP Group	16.41%	2.0%
Municipality Finance Plc	5.44%	0.5%
Danske Bank Plc	4.32%	0.5%
Aktia Bank Plc	1.35%	0.0%
Savings Banks Amalgamation	1.19%	0.0%
Bank of Åland Plc	0.77%	0.0%
S-Bank	0.73%	0.0%
POP Bank group	0.67%	0.0%
Oma Säästöpankki (largest savings bank)	0.25%	0.0%
Mortgage Society of Finland	0.23%	0.0%
Evli Bank Plc	0.08%	0.0%
Handelsbanken Finance Plc	0.05%	0.0%
Bonum Bank	0.03%	0.0%

Notes: The scores as of end-2015. The thresholds for O-SII buffers are set as follows: 2 percent for O-SII scores exceeding 14 percent, 1.5 percent for O-SII scores between 10.5 and 14 percent, 1 percent for O-SII scores between 7 and 10.5 percent, 0.5 percent for O-SII scores between 3.5 and 7 percent, and 0 percent for O-SII scores below 3.5 percent.

Source: FIN-FSA

59. Multiple instruments targeting systemic risks in the structural dimension became effective recently. The capital conservation buffer was fully implemented at 2.5 percent from January 2015 to all banks to strengthen the loss absorbing capacity of the banking sector. In July 2015, the FIN-FSA Board designated four credit institutions as O-SIIs, subjecting them to additional capital requirements of 0.5-2 percent from January 2016 (Table 8). These buffers aim at decreasing the probability of failure of systemic banks, whose insolvency would jeopardize the stability of financial markets in Finland or in other EU member states.

60. Finland does not have a Systemic Risk Buffer (SRB) in the legislation. The SRB is included in the CRDIV/CRR as a voluntary measure, which aims to address systemic risks of a "long-term, non-cyclical" nature, which are not covered by the CRR. It is a flexible instrument that can be applied to all or to a subset of banks, and is subject to a notification requirement to ESRB for buffer rates up to 3 percent.[27] Many EU countries introduced the SRB for a variety of reasons, reflecting the broad set of non-cyclical risks it can address (Table 9). [28]

61. In light of systemic vulnerabilities arising from high interconnectedness in the region, it is desirable to have the SRB in the macroprudential toolkit. It is a flexible measure that can be used not only for the systemic institutions that are subject to the O-SII buffer requirements. In addition, unlike the O-SII buffer, it can be set higher than 2 percent. In fact, other Nordic countries that similarly have high interconnectedness in the region introduced the SRB and set at 3 percent (see Tables 9 and 10 for more specific calibration of the SRB and other capital requirements in these countries). In addition, even if the SRB is set higher than the O-SII buffer, banks are not expected to face difficulties in satisfying the additional requirements, because large banks in Finland currently maintain sufficient capital to meet the additional buffer requirement. When calibrating the SRB requirement, the authorities should consider the benefit of locking-in the current high level of capital to maintain the resilience against the potential shocks arising from the interlinkages in the future.

[27] Above that rate, until 2015 the authorization of the European Commission must be obtained after the delivery of an opinion by the EBA and ESRB. From 2015 the procedure gets more differentiated depending on the scope, geographic exposure and level of the SRB.

[28] The systemic risk buffer is sometimes used as a substitute for the O-SII buffer because the latter was not yet available until 2015 and is capped at 2 percent. The ESRB has pointed out the delineation of the SRB applied to a small subset of banks with the O-SII buffer as an issue, and recommended a number of amendments to the SRB and the O-SII buffers. (ESRB, 2014)

Table 9. Use of Systemic Risk Buffer in EU

Country	Level	Scope	Main motivation
Bulgaria	3 percent	All banks	• Presence of currency board and impact for monetary and fiscal policy • Weak economic environment
Croatia	1.5 and 3 percent	All banks	• Systemic risk resulting from O-SIIs • High concentration in the banking sector • Feature of real estate markets
Czech Republic	1-3 percent	Four O-SII banks	• Systemic risk resulting from O-SIIs
Denmark	1-3 percent	Six O-SII banks	• Systemic risk resulting from O-SIIs
Estonia	2 percent (1 percent from 2016 Q3)	All banks	• Small and open economy • High concentration in the banking sector and common exposure
Netherlands	3 percent	Three largest banks	• Systemic risk resulting from systemically important institutions
Norway	3 percent	All banks	• Exposure concentration
Sweden	3 percent	Four largest banks	• Systemic risk resulting from systemically important institutions • Features of the banking sector (similarity of business models, high common exposures, high interconnectedness, high concentration)

Source: ESRB (2015)

Table 10. Capital Requirements in the Nordic Region, as of April 2016

	Minimum total capital	Capital conservation buffer	Counter -cyclical capital buffer	The higher of:			Minimum for non G-SII/O-SII banks	Minimum for G-SII/O-SII banks
				G-SII buffer	O-SII buffer	SRB		
Finland	8	2.5			0.5-2	n/a	10.5	11-12.5
Sweden	8	2.5	1	1	2	3	11.5	13.5-14.5
Norway	8	2.5	1		1-2*	3 (all banks)	14.5	15.5-16.5
Denmark	8	2.5				1-3	10.5	11.5-13.5

Source: ECB (2016) "Macroprudential Bulletin" Issue 1/2016, ESRB, and national authorities.

Notes: O-SII buffer in Norway is applied on top of the SRB that is 3 percent for all banks. In Denmark, the SRB is used for O-SII buffer.

CONCLUSION AND RECOMMENDATIONS

62. Despite its recent strengthening, the macroprudential policy framework at the national level appears to have areas for improvement. The FIN-FSA Board is designated as macroprudential authority in Finland, while its mandate is limited to the use of tool approved by laws. Clarification of the broader macroprudential policy mandate in the law, including in the FIN-FSA Act, would strengthen the willingness to act. To effectively make use of the BOF's expertise in macroeconomic analysis for systemic risk assessments, consideration should be given to formalize the chairmanship of the BoF representative in the decision making meetings, and formalize the staff level cooperation framework among the FIN-FSA, the BOF and the MoF for macroprudential policy through a memorandum of understanding.

63. Cooperation and coordination with European and Nordic macroprudential authorities will remain important. Despite the complexity of European supervisory architecture, the coordination with the European bodies (in particular the ECB and the ESRB) appears to serve well, and helps counter bias toward inaction at the national level. Against the background of strong financial linkages with Nordic countries and the presence of large Nordic banks as a dominant player in the system, more active collaboration with other Nordic countries, in particular Sweden and Denmark, is critical, including in the area of supervisory data sharing, joint stress testing exercises, and reciprocity arrangements for a wider set of tools.

64. There are important data gaps that need to be filled. The authorities' capacity and framework for systemic risk monitoring appear sufficient, and the report produced for regular macroprudential decision making is of sufficiently high quality. However, detailed analyses of risks using more granular data are needed to appropriately target relevant systemic risks, maximizing their effectiveness and minimizing distortions. To this end, the availability of more disaggregated data, in particular on the household and housing sector, should be enhanced.

65. The macroprudential policy toolkit should be expanded. The current tools in Finnish legislation are predominantly those required in the CRDIV/CRR, with an exception of the LTC limit. Considering scope for cross-border leakages for capital based tools and substantial risks in the household sector, macroprudential tools based on the borrower eligibility (such as LTI and DSTI limits) and their interlocking use with limits on loan maturity should be considered. In light of high interconnectedness in the region, the SRB should be also included in the toolkit.