



# FINLAND

## FINANCIAL SECTOR ASSESSMENT PROGRAM TECHNICAL NOTE ON MACROPRUDENTIAL POLICY FRAMEWORK AND TOOLS

February 2023

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# FINLAND

FINANCIAL SECTOR ASSESSMENT PROGRAM

January 20, 2023

## TECHNICAL NOTE

MACROPRUDENTIAL POLICY FRAMEWORK AND TOOLS

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This Technical Note was prepared by IMF staff in the context of the Financial Sector Assessment Program that visited Finland in March 23-April 13, 2022. It contains technical analysis and detailed information underpinning the FSAP's findings and recommendations. Further information on the FSAP 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
CCoB	Capital Conservation Buffer
CCyB	Counter-Cyclical Capital Buffer
CRD	Capital Requirements Directive
CRE	Commercial Real Estate
CRR	Capital Requirements Regulation
DSTI	Debt-Service-to-Income
DTI	Debt-to-Income
ECB	European Central Bank
ESRB	European Systemic Risk Board
EU	European Union
FFSA	Finnish Financial Stability Authority
FIN-FSA	Finnish Financial Supervisory Authority
FSAP	Financial Sector Assessment Program
FSSA	Financial System Stability Assessment
GDP	Gross Domestic Product
GFC	Global Financial Crisis
IMF	International Monetary Fund
LCR	Liquidity Coverage Ratio
LTC	Loan-to-Collateral
LTV	Loan-to-Value
MoF	Ministry of Finance
MoSAH	Ministry of Social Affairs and Health
MoU	Memorandum of Understanding
NFC	Nonfinancial Corporations
NSFR	Net Stable Funding Ratio
O-SII	Other Systemically Important Institutions
SSM	Single Supervisory Mechanism
SyRB	Systemic Risk Buffer
TN	Technical Note

## EXECUTIVE SUMMARY

**Since the 2016 FSAP, the Finnish authorities have made steady progress in improving the country's macroprudential policy framework.** The authorities have expanded the macroprudential policy toolkit by introducing a systemic risk buffer (SyRB) and a minimum risk weight for mortgage loans. They have also begun developing a positive credit register to record individual borrower data. These granular data will help the authorities to analyze household indebtedness and calibrate macroprudential tools to appropriately target specific vulnerabilities. In addition, cooperation arrangements with other Nordic countries have been expanded by signing an updated Memorandum of Understanding (MoU) to promote financial stability, including by establishing common procedures for information sharing and coordination.

**The institutional framework for macroprudential policy in Finland, formalized in 2014, is mostly in line with the IMF guidance for effective macroprudential policymaking.** The Finnish Financial Supervisory Authority (FIN-FSA) is the designated macroprudential authority, and its Board is assigned the decision-making powers. The Board is empowered to issue, amend, or revoke certain macroprudential policy instruments, such as the counter-cyclical capital buffer (CCyB), systemic risk buffer (SyRB), and loan-to-value (LTV) cap on housing loans. The Bank of Finland (BoF) has an important role in macroprudential policymaking by providing analyses to support macroprudential policy, and the Deputy Governor of the BoF serves as Chair of the Board of the FIN-FSA. Also, the authorities use various communication tools to ensure accountability and transparency.

**Systemic risk monitoring is well organized and conducted on a timely basis, especially in the household sector.** The FIN-FSA and the BoF jointly conduct systemic risk monitoring by analyzing a broad set of indicators. Multiple quantitative methodologies are used to assess systemic risk, conduct institution-level analysis based on bilateral exposure data, and stress testing exercises. They jointly prepare vulnerability analyses and preliminary macroprudential policy proposals for the FIN-FSA Board. Policy recommendations and the outcomes of discussions among authorities at the staff level are summarized in a semiannual Macroprudential Report. Moreover, once a year, the BoF Bulletin summarizes topical financial stability issues using simple charts, and its coverage is commendable. Systemic risk analysis is mainly focused on the household sector because it is seen as a primary source of financial vulnerabilities.

**The sustained increase in residential housing loans is of important systemic concern, and the authorities have taken measures to contain relevant risks.** Although house prices have not increased as much in Finland as in other Nordic countries, household debt has steadily increased and, in 2021, reached the highest level of disposable income yet recorded. The average maturity of loans has also risen. The share of housing company loans, in which home buyers make monthly payments to the housing company for interest and capital repayment, has increased rapidly and reached 16 percent of housing loans in 2021. Since 95 percent of housing loans are variable rate, and only 28 percent of them come with interest rate hedges, a rise in interest rates in response to recent inflation could jeopardize debt repayment by households. Given heightened vulnerabilities in the household sector, the authorities have taken several borrower-based measures to contain risks.

First, the FIN-FSA Board lowered a cap on the LTV ratio for housing loans to 85 percent, except for first-time home buyers. Second, the government published proposals to set the maximum maturity of housing loans, and several measures to limit housing company loans. Third, the FIN-FSA Board issued a nonbinding recommendation to lenders to originate mortgage loans only if borrowers can keep debt-service-to-income (DSTI) ratios under stressed conditions at, or below, 60 percent.

**Despite significant progress, the authorities should consider strengthening the macroprudential policy framework in a few areas:**

- To contain vulnerabilities arising from housing loans, macroprudential policy measures should be expanded to include tools such as caps on debt-to-income (DTI) or DSTI ratios. Having such tools available would be useful to contain leverage increases among certain households, and at a lower economic cost than LTV caps.
- To better prepare for an unexpected economic downturn, the authorities should consider introducing the positive rate of CCyB in a neutral phase of the credit cycle (positive neutral CCyB), which requires legislative amendments. Traditionally, the CCyB is activated when the credit-to-GDP gap is positive, based on the assumption that the credit cycle is symmetric. However, the COVID-19 pandemic demonstrates that shocks to the banking system can be asymmetric, and an unexpected sudden credit contraction is possible even when there are no signs of excessive credit built-up. The positive neutral CCyB could be used as a releasable buffer when a sudden credit crunch is imminent.
- To enhance their systemic risk monitoring framework, the BoF and the FIN-FSA should develop capacity for granular data analysis, covering corporate sector risks in greater detail and addressing existing data gaps. The ongoing development of Finland's positive credit register will provide microdata on household indebtedness and income, which are useful to analyze vulnerabilities and to calibrate policy, and may be useful to authorities when considering the distributional consequences of macroprudential policies. Also, the analysis of corporate sector vulnerabilities should be as developed as that of household sector vulnerabilities, and it would be beneficial to address related data gaps. For example, the authorities should continue their efforts to develop a comprehensive corporate real estate (CRE) price index and to analyze granular firm balance sheet data. Finally, while the positive credit register will cover a broad range of loan contracts, it would be useful to add collateral values and to include housing company loans.

**Table 1. Finland: Recommendations on Macroprudential Policy Framework**

Recommendations		Agency	Time <sup>1</sup>
<b>A. Institutional Arrangements</b>			
1	<i>Clearly define</i> a macroprudential policy mandate for FIN-FSA and its Board. (¶19)	MoF	MT
2	<i>Formalize</i> the practice that FIN-FSA Board member from BoF serves as the chair of the Board in macroprudential policy meetings. (¶10)	MoF	MT
3	<i>Refine</i> the accountability of macroprudential policy by providing biannual financial stability reports that assess vulnerabilities and address the interests and concerns of each stakeholder. (¶13)	FIN-FSA, BoF	MT
4	In the context of recommendation 2 in Table 1 of the FSSA (secure FIN-FSA's independence by ensuring that future Board members are not officials of Ministries), <i>reconsider</i> the current macroprudential policy governance to maintain a role for the MoF and MoSAH. (¶14)	MoF	NT
5	<i>Consider</i> providing the Board of the FIN-FSA with hard powers to issue regulations on macroprudential policy, including the adoption of new instruments. (¶17)	MoF	MT
6	If recommendation 5 is infeasible to implement, <i>consider</i> providing the Board of the FIN-FSA with power to recommend actions with a "comply or explain" principle. (¶17)	MoF	MT
7	<i>Continue</i> to enhance the involvement of the FIN-FSA staff for macroprudential policy preparation. (¶18)	FIN-FSA	MT
8	<i>Seek</i> to further strengthen collaboration with Nordic-Baltic macroprudential authorities in joint stress testing exercises. (¶27)	FIN-FSA, BoF	MT
<b>B. Systemic Risk Monitoring</b>			
9	<i>Enhance</i> systemic risk monitoring by strengthening the analysis of disaggregated data, corporate sector vulnerabilities, and funding and liquidity vulnerabilities. (¶31)	FIN-FSA, BoF	MT
10	<i>Improve</i> the positive credit register by broadening the scope of data collection. (¶33)	FIN-FSA, BoF	NT
11	<i>Address</i> existing data gaps by developing a comprehensive commercial real estate price index and collecting data on cross-border exposure. (¶34)	FIN-FSA, BoF	MT
<b>C. Tools and Calibration</b>			
12	<i>Consider</i> introducing a positive neutral counter cyclical capital buffer. (¶40)	MoF	MT
13	<i>Add</i> debt-to-income and debt-service-to-income limits to the macroprudential policy toolkit. (¶46)	MoF	MT
14	<i>Redefine</i> the loan-to-collateral limit. (¶50)	MoF	MT
15	<i>Reactivate</i> the systemic risk buffer once circumstances allow. (¶61)	FIN-FSA, BoF, and MoF	NT

<sup>1</sup> Time: I = immediate (within one year); NT = near term (within 1 to 3 years); MT = medium term (within 3 to 5 years).

## INTRODUCTION<sup>1</sup>

**1. In the wake of the Global Financial Crisis (GFC), the need for macroprudential policy has become widely accepted.** The GFC, and the period leading up to it, demonstrated that financial vulnerabilities, such as rising household indebtedness and higher risk taking, can accumulate when financial conditions are easy and can severely amplify the effects of adverse financial shocks. When crises occur, debt overhang and deleveraging threaten financial stability by depressing asset and collateral values, prompting liquidity squeezes, and threatening bank solvency, all of which are harmful to real economic activity. It is now recognized globally that the activation of macroprudential policy tools to lean against the accumulation of financial vulnerabilities and to build resilience among financial institutions is beneficial, as it prevents credit crunches and reduces downside risks.<sup>2</sup>

**2. Finland’s financial system needs a strong macroprudential framework.** Finland faces the same monetary policy conditions as all countries in the euro area, but credit developments and financial conditions may be different from those of other member states. Structural features of the banking sector, such as high reliance on wholesale funding and strong interconnectedness with the rest of Nordic region, pose potential vulnerabilities. Moreover, an extended period of low interest rates may have encouraged a buildup of systemic risks, especially in household mortgage loans. Macroprudential policy plays an important role in safeguarding the financial system because it is mostly set at the national level. Hence, macroprudential policy in Finland needs a strong institutional framework, robust systemic risk monitoring, and an expanded toolkit.

**3. Macroprudential policy in Finland is a shared competency between national authorities and European agencies.** The EU’s Capital Requirements Directive (CRDV) and Capital Requirements Regulation (CRR2) establish a range of macroprudential policy tools at the European Union level, while other important tools can be used by the national authorities. As a country participating in the Single Supervisory Mechanism (SSM), Finland shares macroprudential responsibilities with the European Central Bank (ECB). Moreover, Finland is a member of the European Systemic Risk Board (ESRB), which monitors and assesses systemic risks, and issues warnings and recommendations. In terms of the domestic macroprudential framework, the Finnish Financial Supervisory Authority (FIN-FSA) is the designated macroprudential authority, and the Board of the FIN-FSA is assigned the decision-making powers. In line with best practices, the Bank of Finland (BoF) plays an important role by providing analyses to support macroprudential policy decision making, and the deputy governor of the BoF serves as the chair of the Board.

<sup>1</sup> This technical note was prepared by Fumitaka Nakamura (Monetary and Capital Markets Department, IMF). The review was conducted during the period of September 5–16, 2022, and considers the legal and regulatory framework in place and the practices employed at the time. The mission team would like to thank the FIN-FSA, BoF, MoF, ECB, and representatives from the private sector and academics for their excellent cooperation and fruitful discussions.

<sup>2</sup> See, among others, Brandão-Marques, Gelos, Narita, and Nier (2020), “[Leaning Against the Wind: A Cost-Benefit Analysis for an Integrated Policy Framework](#),” IMF Working Paper No. 20/123.



**4. This technical note (TN) reviews the domestic macroprudential policy framework in Finland and offers recommendations to strengthen it.** The assessment is based on the IMF “Staff Guidance Note on Macroprudential Policy” ([IMF 2014a](#)), its supplement “Detailed Guidance on Instruments” ([IMF 2014b](#)), and other IMF policy papers. Specifically, this Note:

- Reviews the institutional framework for macroprudential policy in Finland and assesses its adequacy given Finland’s specific circumstances.
- Reviews and assesses the framework for systemic risk monitoring, including the usage of data.
- Outlines the main macroprudential risks and assesses available macroprudential policy tools.

**5. The Note is structured as follows:** Section II examines current institutional arrangements and provides recommendations. Section III evaluates the systemic risk monitoring capacity and provides options to enhance it. Section IV assesses different types of systemic risks, discusses the availability of macroprudential instruments, and proposes a set of recommendations. Some of these recommendations are restated in the FSSA.

## INSTITUTIONAL FRAMEWORK

**6. A strong institutional framework is the cornerstone for ensuring the effective conduct of macroprudential policy.** This note assesses the domestic institutional arrangements based on three aspects: (1) the *willingness to act*, which makes sure the sufficient timely actions by dedicated institutions through a clear mandate and an accountability framework, including communication tools; (2) the *ability to act*, which assures obtaining necessary information, activating regulatory constraints, and changing regulatory perimeters when necessary; and (3) *effective cooperation* in risk assessments and mitigation across domestic and international agencies.

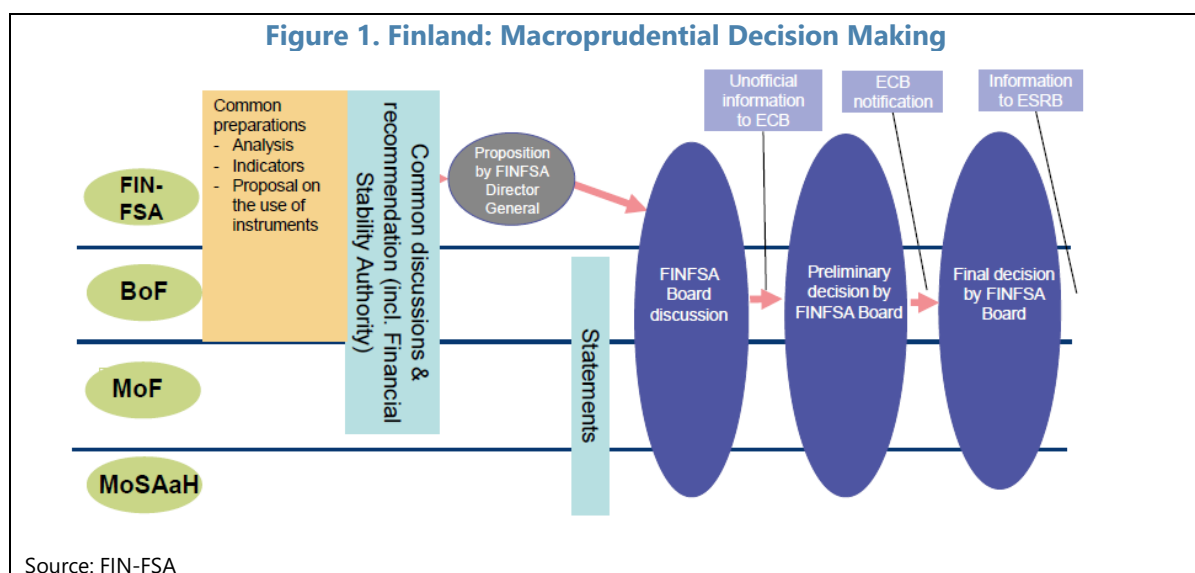
### A. Willingness to Act

**7. The FIN-FSA is the designated macroprudential authority in Finland.** Although the Act on the FIN-FSA does not explicitly set out a clear macroprudential mandate for the FIN-FSA, it stipulates that the FIN-FSA is responsible for regulating and supervising of individual credit institutions, insurance, and pension institutions (Chapter 1, Article 1). Also, it states that a part of the tasks of the FIN-FSA is to prepare measures necessary to ensure the stability of the financial system as a whole, together with the MoF (Ministry of Finance) and BoF (Bank of Finland) (Chapter 1, Article 3), and in cooperation with FFSA (Finnish Financial Stability Authority) (Chapter 10, Article 4-5 of the Act on Credit Institutions). Moreover, the Act on Credit Institutions transposes the relevant macroprudential articles of CRD and designates the FIN-FSA as the macroprudential decisionmaker in Finland, while the Act on FIN-FSA stipulates that the decisionmaker is the Board of FIN-FSA, in which MoF and BoF are required to have one member each. Thus, there is a shared understanding in Finland that the FIN-FSA is responsible for macroprudential policy in coordination with the BoF, the MoF, and the FFSA.

**8. Macroprudential decisions are made by the Board of the FIN-FSA, based on a formal proposal of the Director General of the FIN-FSA (Figure 1).** The Board includes representatives

from the BoF, the MoF, the Ministry of Social Affairs and Health (MoSAH), and two or more independent members. It has a maximum of six members, all appointed by the Parliamentary Supervisory Council.<sup>3</sup> The BoF, MoF, and MoSAH are entitled to provide their opinions on decisions on macroprudential measures. In addition, the BoF and the MoF have a right to raise macroprudential issues and proposals to the FIN-FSA Board outside the normal quarterly meetings at their discretion. In practice, draft decisions are prepared jointly by BoF and FIN-FSA staff and discussed with the MoF and FFSA. The ECB is consulted for an opinion on the preliminary decisions by the Board, on the basis of which the final decision by the Board is made. The Board decides by consensus; if there is disagreement, decisions are made by majority voting.

**9. Strengthening the willingness to act requires a clear macroprudential policy mandate for the FIN-FSA and its Board.** Although the Act on the FIN-FSA mentions the macroprudential objective (“to ensure the stability of the financial system as a whole”) as a part of its tasks (Chapter 1, Article 3), its focus is mainly on microprudential supervision (“in charge of regulations and supervision of the individual credit institutions”; Chapter 1, Article 1). The greater emphasis on microprudential objectives suggests that the macroprudential mandate is not fully met,<sup>4</sup> especially in “bad times.” Moreover, a clear mandate can counter the inaction bias often arising from financial institutions’ lobbying and political pressure and can underpin the legitimacy of policy actions to safeguard the financial system. Given that the FIN-FSA is the designated macroprudential authority and its Board is the decision maker, the primary objectives of the FIN-FSA could explicitly include a statement like “maintaining the stability of the financial system as a whole” in Chapter 1, Article 1, of the Act on the FIN-FSA. This, for example, could be included in the next revision of the Act, which would require the involvement of the MoF.



<sup>3</sup> To enhance the FIN-FSA’s independence, it would be desirable not having officials appointed by MoF and MoHSA on its Board (see FSSA and TN on regulation and supervision of less significant institutions).

<sup>4</sup> See, for example, Osinski, Seal, and Hoogduin (2013), “[Macroprudential and Microprudential Policies: Toward Cohabitation](#),” IMF Staff Discussion Note 13/05.

**10. There is merit in formalizing the practice that the representative of the BoF serves as the Chair of the Board in macroprudential policy meetings.** Although the Board has been chaired by the Deputy Governor of the BoF since its creation in the current form in 2009, it is not enshrined in any formal agreement. To harness the central bank's expertise in systemic risk identification and its incentives to ensure that macroprudential policy is pursued effectively, it is desirable that the Board be chaired by the representative from the BoF, which is in line with the IMF staff guidance note ([IMF 2014a](#)). This formalization could also help shield macroprudential policymaking from political interference, which can potentially encumber macroprudential policy action. All of the Board members, as well as the Chair of the Board are appointed by the Parliamentary Supervisory Council, and legislation amendments would be needed to codify that the representative of the BoF act as Chair of the Board.

**11. The recent revision of the macroprudential strategy is commendable and timely.** The main changes of the revised strategy published on June 28, 2022, compared to the previous version from 2018 is the possibility to release macroprudential measures in periods of stress to support bank lending. As new vulnerabilities emerge, novel analytical insights are gained, and changes to the toolkits might be needed. Thus, it is essential to have a continuously evolving macroprudential policy strategy. For example, the recent COVID-19 pandemic demonstrated the importance of macroprudential policy relaxation in response to unexpected negative economic shocks that emanate from outside the financial sector.<sup>5</sup> This timely update of macroprudential policy strategy may, therefore, enhance the effectiveness of the policy.

**12. The authorities use multiple mechanisms to enhance the accountability and transparency of macroprudential policy.** All quarterly macroprudential decisions made by the FIN-FSA Board, together with the press release and the Director General's proposal, are made public on the FIN-FSA website. Twice a year, the BoF publishes a macroprudential report, which the FIN-FSA Board uses to support macroprudential decisions. An annual stability assessment of the Finnish financial system is also published by the BoF. Moreover, the BoF publishes its analysis in the BoF Bulletin and in more technical BoF Economic review articles and blog posts on financial stability topics throughout the year. The coverage of the topics in BoF Bulletin is commendable. Financial stability issues are also communicated to the public through newspaper interviews. Several experts also have professional profiles on Twitter, where they discuss financial stability issues and answer questions. In addition, BoF experts give lectures and organize lecture series on macroprudential topics at major Finnish universities.

**13. Clear communication of policy intentions can improve the effectiveness of macroprudential action, and there is scope to enhance the accountability of macroprudential policy decision making in several aspects.**

- **Although the authorities have made financial stability reports more accessible to lay readers, there is scope to refine them.** The authorities publish the BoF Bulletin on financial

<sup>5</sup> See, for example, Nier, and Olafsson (2020), "[Main Operational Aspects for Macroprudential Policy Relaxation](#)," IMF Special Series on COVID-19.

stability, with a summary of the financial stability assessment as well as analysis on topical issues.<sup>6</sup> However, in addition to this, having the periodic assessment of vulnerabilities using the same charts in the biannual financial stability report would make it easier for readers to comprehend how risks evolve over time especially compared to the last assessment, fostering the understanding of the macroprudential actions. For example, the authorities could use one chapter of the report to discuss the vulnerabilities in each sector, while the chapter could be concise to ensure readability of the report.

- **The authorities could enhance accountability through the effective use of tiered communication.** When implementing a new toolkit, it is essential to ensure that the public understands the advantages and costs of the instruments, especially during the legislative process. The authorities need to use every opportunity to publicly communicate the need for the measures. In this regard, the authorities should consider that the impact of macroprudential policy may be heterogeneous rather than homogeneous across households (i.e., that there are important distributional considerations), and that there may be concerns that the costs of implementing a new policy may outweigh the benefits, at least for certain households. For example, implementing the cap on DTI will be of greater concern to lower income and younger households since their ability to borrow could become severely constrained. In this regard, an explanation of the macroprudential measures and their benefits targeted at corresponding households could improve public approval of the tool.<sup>7</sup> Thus, tailored communication material, which explains the distributional consequences and net benefits of the macroprudential policy for each stakeholder would be useful to address such potential concerns.<sup>8</sup>

**14. Given the need to enhance the independence of the FIN-FSA (see recommendation #2 of the FSSA), the governance of macroprudential policy could be revised.** The Board of the FIN-FSA is both the microprudential and the macroprudential authority. The current governance structure for macroprudential policy has worked well and is in line with best practices because it gives a key role to the BoF and a role to the MoF in light of the need for legislative action to change the macroprudential toolkit or the regulatory perimeter.<sup>9</sup> However, enhancing the independence of the FIN-FSA Board as the microprudential authority—by not having officials appointed by MoF and MoHSA on it, thereby avoiding the appearance of lack of independence (see TN on regulation and supervision of less significant institutions and FSSA)—conflicts with the current design of the Board as the macroprudential policy authority. There are a few options available to authorities to resolve

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<sup>6</sup> While the macroprudential report provides biannual analysis on financial vulnerabilities, it is mainly used to support Board discussions. Thus, the aim of the publication is to complement Board decisions rather than provide a summary for the public and journalists.

<sup>7</sup> For example, a heterogeneous agent model is useful in analyzing the distributional consequences of macroeconomic policy. The analytical work on the usefulness of borrower-based measures addresses this issue in more detail. See “Vulnerabilities from Residential Housing and Household Sector” (Section B of Systemic Risk and Macroprudential Tools).

<sup>8</sup> For example, the potential concerns about distributional consequences of monetary policy are addressed in Haldane (2018) “[How Monetary Policy Affects Your GDP](#).” Finch Lecture, University of Melbourne.

<sup>9</sup> See IMF (2013) “[Key Aspects of Macroprudential Policy](#),” IMF Policy Paper.

this conflict and to keep the governance of macroprudential policy unchanged, including: (i) creating separate Board committees for macroprudential and microprudential oversight; and (ii) creating a financial stability council outside the FIN-FSA but with same composition and macroprudential powers as the current FIN-FSA Board and with the FIN-FSA operating as the secretariat of the council.

## B. Ability to Act

**15. The FIN-FSA Board has “hard powers” to implement certain macroprudential instruments outlined in law.** The Board is empowered to issue, amend, or revoke various macroprudential policy instruments based on the Act on Credit Institutions. It has hard powers to calibrate the CCyB and the SyRB. It also designates systematically important institutions, regularly updates these lists, and sets their additional capital surcharges. Moreover, the Board can also introduce other macroprudential instruments that are outside the CRDV/CRR2 toolkit, such as an LTV limit.<sup>10</sup> Also, the Board can make nonbinding recommendations to entities supervised by the FIN-FSA on macroprudential policy measures not approved by national law or regulations, such as DTI or DSTI limits.

**16. The FIN-FSA has hard powers to collect information for the formulation of macroprudential policy.** The FIN-FSA can request information from supervised entities<sup>11</sup> and market participants<sup>12</sup> when it needs to fulfill its tasks (as described in the Act on the FIN-FSA Chapter 3, Article 18). Also, according to the Act on the Bank of Finland, the BoF has the right to obtain any notifications, reports, and other information necessary to carry out its statutory tasks from authorities and credit and financial institutions,<sup>13</sup> and other financial market participants.

**17. Consideration should be given to providing the FIN-FSA Board with powers beyond measures approved in the law.** The hard powers of the FIN-FSA Board are restricted to specific instruments outlined in the Act on Credit Institutions and CRR2. Beyond the instruments approved in law, the Board can only issue soft (nonbinding) recommendations to entities supervised by the FIN-FSA on macroprudential policy measures, such as DTI or DSTI limits. However, there is a need to ensure that the Board has various policy options to contain systemic risks, in part because it can take a long time to introduce new instruments, given the need for new legislation and the length of the

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<sup>10</sup> Strictly speaking, the FIN-FSA uses a loan-to-collateral (LTC) cap, which includes a wide range of collateral in addition to the dwelling to be purchased by the borrower. However, this additional collateral might potentially undermine the effectiveness of the LTC ratio to contain housing market booms. This issue, arising from the definition of collateral, is discussed in “Vulnerabilities from Residential Housing and Household Sector” (see Section B of Systemic Risk and Macroprudential Tools).

<sup>11</sup> Supervised entities include credit institutions, insurance companies, employee pension insurance companies, fund management companies, investment companies, exchanges, settlement institutions, central securities depositories, central counterparties, payment institutions, related holding companies, the deposit insurance fund, the investor insurance fund, pension funds, and unemployment funds.

<sup>12</sup> Financial market participants include issuers of securities, clearing counterparties, and insiders.

<sup>13</sup> These include monetary financial institutions, investment funds, private equity funds, custodians, other financial institutions, and peer-to-peer brokers.

legislative process. Providing the Board with the powers to issue regulations on macroprudential policy, including the adoption of new instruments, would help it take timely actions on macroprudential policy, especially to address emerging risks. If introducing this type of hard power is infeasible, providing the FIN-FSA with semi-hard powers, by allowing it to issue recommendations on a “comply or explain” basis, is also an option. Compared to nonbinding recommendations, an advantage of semi-hard powers is that they enhance the effectiveness of recommendations with tighter conditions and peer pressure, thus increasing the chance of compliance and ensuring transparency and public accountability.

**18. The FIN-FSA should continue to be actively involved in macroprudential policy analysis by using its natural advantage.** The FIN-FSA has only a few staff fully dedicated to macroprudential policy analysis. Although these resources are sufficient overall, thanks to the considerable resources provided by the BoF, the FIN-FSA should tap its own strengths when proposing necessary macroprudential policy actions. These include expertise in the supervision of individual institutions, setting financial regulations, and supervision of the non-bank financial intermediation sector, such as investment funds and pension funds. Tapping these natural advantages could be further enhanced through active collaboration with various departments and divisions in FIN-FSA. For example, information from microprudential supervision would be useful when estimating each institution’s expected response to the activation of specific macroprudential tools. Also, the investment portfolio information of investment funds and pension funds could be useful for the analysis of vulnerabilities given the Finnish banking sector’s high reliance on wholesale funding.

## C. Effective Coordination and Cooperation

### Domestic Coordination

**19. The FIN-FSA Board plays an important role in fostering coordination across member agencies.** It is supported by representatives from various institutions: the BoF, MoF, and MoSAH. This institutional framework provides a formal coordination mechanism across member agencies, with multiple layers of review, which helps to incorporate different points of view.

**20. The BoF plays a significant and multi-faceted role in macroprudential policy decision making.** The BoF has a formal mandate for financial stability based on the Act on the BoF (Chapter 1, Article 3). The BoF is primarily responsible for the analysis of systemic risks and vulnerabilities. Moreover, the BoF prepares the Macroprudential Report, the policy recommendations as well as the outcome of the discussions among authorities in a staff level, together with FIN-FSA staff. This Macroprudential Report is then used to support macroprudential decision making by the Director General and the FIN-FSA Board. In addition, the BoF proposes one representative to FIN-FSA Board, and the member from the BoF has typically been elected as the Chair of the Board.

**21. The MoF and MoSAH also share responsibility in macroprudential policy.** The MoF and MoSAH are required to have one member each on the FIN-FSA Board. The MoF and MoSAH are

responsible for making proposals for amendments in legislation of the banking sector and the insurance sector, respectively. Moreover, the MoF contributes to staff-level discussions with the FIN-FSA and the BoF on macroprudential analysis and policy recommendations.

## European Coordination

**22. As Finland is in the EU’s SSM, the macroprudential mandate is shared between the Finnish authorities and the ECB.** The ECB has established a process for information exchange and coordination among national authorities. Key commitments include:

- a. For the quarterly macroprudential policy meeting of the FIN-FSA Board on the use of the CCyB and other tools, the ECB is provided official notification of the intended policy decisions ten working days prior to making final decisions. This is in line with the requirements set in the SSM regulation.<sup>14</sup> Then, the ECB has an option to object to the intended policy measures, stating its reasons within five working days. In line with the SSM Framework Regulation, the FIN-FSA provides the ECB with informal information on the potential policy decisions ahead of the official notification, together with further clarifications on the assessment where needed.
- b. In addition, the ECB assesses the systemic risks and analyzes the macroprudential policy needs for the Macroprudential Forum of the ECB Governing Council and Supervisory Board. Prior to the Macroprudential Forum meetings, these assessments are discussed in the ECB Financial Stability Committee, its substructures,<sup>15</sup> and in bilateral dialogues between the national authorities and the ECB staff. In practice, there is regular dialogue between the ECB and national authorities’ staff for the preparations of the biannual Macroprudential Policy Report of the ECB.

**23. The European Systemic Risk Board (ESRB) is responsible for macroprudential oversight at an 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. The ESRB can issue nonbinding warnings and recommendations for which a “comply or explain” procedure applies to a country’s macroprudential authority. Country authorities have the power to initiate and implement macroprudential measures, subject to notification to and coordination with the ECB.

**24. The dialogue between the ESRB and Finnish authorities on systemic risk assessments and macroprudential policy is mainly conducted through the quarterly process of preparations for ESRB General Board meetings.** Also, the country-specific systemic risk and macroprudential policy assessments are discussed in the Advisory Technical Committee of the ESRB and its substructures. Moreover, information is exchanged bilaterally through written procedures, together with informal discussions. The ESRB conducts a quarterly survey on systemic risk and

<sup>14</sup> Council Regulation (EU) No 1024/2013.

<sup>15</sup> This includes Macroprudential Analysis Group and Macroprudential Policy Group.



macroprudential policy in which the national authorities provide views both on national and EU-level issues.

### **Nordic-Baltic Cooperation**

**25. Due to the high interconnectedness of the financial system to the Nordic-Baltic region, Finland is actively involved in regional collaboration on macroprudential policy issues.** The Finnish banking sector is highly interconnected with the financial systems of other Nordic countries, bringing considerable contagion risk. Thus, the FIN-FSA and the BoF participate in the Nordic-Baltic Macroprudential Forum, held twice a year, where systemic risk analysis and macroprudential policy issues are discussed.<sup>16</sup> During the COVID-19 pandemic, this forum served as an important place to discuss the macroprudential policy measures to be taken.

**26. There was an update on the Memorandum of Understanding (MoU) between the Nordic and Baltic authorities responsible for financial stability in 2018.** The MoU was signed by all Nordic-Baltic central banks, financial supervisory authorities, resolution authorities, and relevant ministries. The MoU was designed to enhance cooperation and coordination between the countries in promoting financial stability and preventing financial crises. In addition, it enhances cooperation by establishing common procedures for information sharing and coordination. Moreover, the MoU between Nordic supervisors and the ECB in 2016 contains the principle of full reciprocity of macroprudential tools in line with ESRB recommendations. These reciprocity measures are helpful to mitigate cross-border leakages between Nordic countries.

**27. The authorities should seek to expand Nordic-Baltic regional cooperation arrangements.** In spite of the updated MoU on cooperation on financial stability between Nordic and Baltic countries, there is room to enhance regional cooperation to contain systemic risks. For example, given strong trade and financial cross-border links in the Nordic region, a joint stress testing exercise would be helpful to assess the vulnerabilities in the banking and the nonbank financial intermediation sectors.

## **SYSTEMIC RISK MONITORING**

**28. Solid and continuous monitoring of systemic vulnerabilities in the financial sector is crucial for the proper and timely activation/relaxation of macroprudential policy.** This section assesses the existing framework of systemic risk monitoring by examining (i) the use of indicators and quantitative methods in the risk analysis, (ii) the process between the risk analysis and policy decision, and (iii) data gaps to be addressed and analytical tools to be enhanced.

**29. The BoF and the FIN-FSA analyze a broad set of indicators and use multiple quantitative methodologies for systemic risk assessments.**

<sup>16</sup> Also, these issues are more frequently discussed in its working groups.



- The BoF monitors a set of indicators that have been found useful in academic studies to predict banking crises in the medium terms such as credit-to-GDP gaps,<sup>17</sup> the change in the balance sheet of the banking sector, real housing prices, and a heat map of vulnerabilities in the banking sector.<sup>18</sup> The BoF also uses a financial market stress indicator, calculated from various financial market data, to assess short-term financial stress. For example, the indicator quantified the financial market stress during the GFC, European debt crisis, and the COVID-19 pandemic.
- The BoF uses a broad range of quantitative models, including: (i) early warning models of financial crisis; (ii) asset price and real estate valuation models; and (iii) contagion risk models. Moreover, scenario analyses and stress test exercises are used to evaluate the potential impact of severe economic recessions and its resilience together with the FIN-FSA. Stress test results are actively used to calibrate the amount and the composition of capital requirements.
- In addition, the BoF meets representatives from private banks, financial market participants, and entrepreneurs on a regular basis. This qualitative information is used to make a forward-looking assessment of systemic risks.
- The FIN-FSA plays a multi-faceted role in systemic risk analysis. It analyzes the financial position, risks, and resilience of the Finnish financial sector, assesses the impacts of capital-based macroprudential measures on financial institutions, and conducts institution-level analysis based on bilateral exposure data. As for granular-data analysis, the FIN-FSA collects quarterly data from large deposit-taking banks on large bilateral exposures and quarterly institution-level data on life and non-life insurers' investment portfolios. The bilateral exposures data are used to analyze potential contagion risks of the Finnish banking sector through inter-bank exposures and asset commonalities caused by macroeconomic or idiosyncratic shocks. The FIN-FSA also analyzes the interconnectedness within the Finnish financial system using security-by-security data from investment portfolios.

**30. Macroprudential policy decisions in Finland are based on the use of data and expert judgement.** The Quarterly Macroprudential Report is used to support policy decision making, broadly covers macroprudential risks, and highlights developments in key indicators. It includes not only the signals from typical indicators, such as the credit-to-GDP ratio, but also contains other complementary data, such as real house prices, private sector credit growth, and the current account-to-GDP ratio. Macroprudential policy decision-making based on multiple indicators and expert judgment, rather than relying on mechanical policy rules, is in line with the IMF guidelines ([IMF, 2014a](#)).

**31. While the financial stability report overall has broad coverage, continued efforts are needed to enhance the depth of the analysis.** The annual report on financial stability covers topics

<sup>17</sup> See, for example, Drehmann, Borio, Gambacorta, Jiménez, and Trucharte (2010). "[Countercyclical Capital Buffers: Exploring Options](#)," BIS Working Papers No. 317.

<sup>18</sup> The authorities generate a heat map by estimating each indicator's deviation from their median values. For example, they use macroeconomic variables such as credit growth, housing prices, and debt servicing burden.

from various angles, including topical issues like the digitalization of financial intermediation and the role played by the financial sector in climate change mitigation. Moreover, the Bank of Finland Bulletin briefly explains key financial stability issues using simple charts. However, the systemic risk analysis can be strengthened in several areas by increasing resources:

- *The BoF and the FIN-FSA should enhance their systemic risk monitoring framework by developing granular data analysis.* The compilation of a positive credit register provides microdata on household indebtedness and income. The data from the positive credit register will be useful for the analysis of vulnerabilities and the calibration of policy, especially in terms of its distributional consequences. Also, the use of AnaCredit (covering loan-level data in the euro area) and Securities Holdings Statistics (providing information on securities held by selected categories of euro area investors, broken down by country of residence) would be an important step forward in enhancing systemic risk monitoring analysis. Given that the development of microdata analysis takes time and needs relevant expertise, authorities should build capacity in systemic risk monitoring with granular data by hiring and training staff.
- *The analysis of corporate sector vulnerabilities should be as developed as that of household sector vulnerabilities.* Currently, household sector vulnerabilities are more extensively covered because the risks coming from this sector, and in particular those related to real estate, seem to be more material. Although the authorities have been developing the corporate sector analysis, the COVID-19 pandemic and the war in Ukraine highlight the importance of monitoring a comprehensive set of indicators. For example, given that the effects of macroeconomics shocks vary by sector and business environment, granular data analysis would help identify risks not captured in aggregate analyses. The use of firm-level data would also help develop indicators of credit quality and of the riskiness of the aggregate credit allocation.<sup>19</sup> Developing a systemic risk monitoring framework using firm microdata will be helpful to assess financial vulnerabilities in a forward-looking manner.
- *The authorities should seek to further strengthen liquidity and funding analysis.* Finland's loan-to-deposit ratio is among the highest in Europe (see Figure 7), leading to higher reliance on market funding. Although there have been limited liquidity vulnerabilities, due to the stable wholesale funding market, Finland's higher-than-average economic ties with Russia can affect market pricing, potentially leading to difficulties in accessing wholesale funding. Thus, it would be useful to cover liquidity risk more broadly by monitoring wholesale funding market conditions, the high-quality liquid assets held by banks, and FX position by currency, for example.

**32. The planned introduction of the positive credit register covering a broad range of items is a welcome step toward monitoring systemic risks from the household sector.** This

<sup>19</sup> Useful indicators include the quantiles of the distribution of interest rate coverage ratios, leverage ratios, and expected default frequencies over the cross-section of firms. Firm-level data can also produce more dynamic measures of the riskiness of the allocation of credit such as the ones proposed by Greenwood, and Hanson (2013) "Issuer Quality and Corporate Bond Returns," *The Review of Financial Studies*, 26(6), pp.1483-1525, and Brandão-Marques, Chen, Raddatz, Vandembussche, and Xie (2022) "The Riskiness of Credit Allocation and Financial Stability," *Journal of Financial Intermediation*, 51, p.100980.

register will cover broad exposures not limited to mortgage loans,<sup>20</sup> and the planned information-reporting requirement will cover all companies that issue loans to private individuals and the self-employed. This broad coverage of the positive credit register will provide valuable information for systemic risk monitoring and for addressing risks emerging from credit issues. The legal act was submitted to Parliament in early 2022, and the first stage of this register focused on consumer credit is expected to be used in macroprudential analysis and financial market surveillance from the first half of 2024. The second stage of the register, which will cover broader reported items, is expected in Spring 2026.

**33. Further refinements in the design of the positive credit register would be useful to better capture the vulnerabilities from the household sector.** While the reported items include overall good coverage of information related to terms and conditions,<sup>21</sup> the collateral value will not be included. Since this is crucial information for estimating the LTV ratio, which is the main borrower-based macroprudential policy tool in Finland, it would be useful to include this item in the future. Moreover, although housing company loans account for 16 percent of housing loans (see Figure 4), this is not included in the register since the debtor is the housing company.<sup>22</sup> The authorities should add housing company loans to the positive credit register as a matter of urgency, given that the households are effectively responsible for housing company loan debt servicing.

**34. The authorities should continue their efforts to address existing data gaps.** Specifically, the authorities should consider the following measures:

- *Develop a comprehensive commercial real estate (CRE) price index and utilize it in systemic risk analysis.* Although Statistics Finland, the national statistical institution in Finland, has launched a pilot project to produce CRE prices, the timeframe for publishing data is still open due to the heterogeneity in type and size of properties, and due to data collection issues. Since this is an important indicator for assessing vulnerabilities and to consider the need for macroprudential policy activation, continued efforts to construct commercial property price indexes are needed.

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<sup>20</sup> Loan contracts on the register will include mortgages, student loans, consumption loans, credit cards and bank accounts with a credit limit, vehicle loans, loans for an investment purpose, part payments, and leasing contracts. In the second stage, loans granted for an individual's business operations will also be reported to the register.

<sup>21</sup> This includes the following information: the amount of credit granted and drawn, currency, the method and interval of credit repayment, the last due date, the total interest charged on the loan, interest margin, the basis for determining interest, the length of the interest rate determination period, the end date of the fixed interest period and the basis for determining the interest period, interest hedging (cap or tube), whether the credit is secured, type of collateral, personal identification number of the guarantor, the start and end dates of the repayment period agreed in the credit agreement, the amount of the installment paid, the amount of interest paid, paid credit costs other than interest, and credit balance after repayment.

<sup>22</sup> The positive credit register would benefit if data on housing company loans were included. These loans represent a significant fraction of debt in Finland, and a large share of these loans are amortized by households. Yet they are not included in the initial definitions of the credit register. Although the authorities have a project underway to deal with this issue, a risk is that once the register is complete there will be no sufficient progress to complete this part of the project.

- *Further effort is required to collect data on cross-border exposures.* Given that syndicated loans and international bonds are actively used in CRE finance, and institutional investors and real estate investment funds use various cross-border structures, it is important to obtain detailed information on cross-border financing. In this regard, a better data sharing framework in the EU and Nordic-Baltic regions would be helpful to close the data gap.

## SYSTEMIC RISK AND MACROPRUDENTIAL TOOLS

**35. This section analyzes the financial system vulnerabilities and assesses macroprudential tools based on identified risks in the analysis.** Systemic vulnerabilities are evaluated based on the developments in multiple signaling indicators, following the IMF Staff Guidance Note on Macroprudential Policy (IMF 2014a). This section explores (1) vulnerabilities stemming from broad-based credit booms, (2) vulnerabilities in the household sector, with a focus on residential housing, (3) vulnerabilities in the corporate sector, (4) vulnerabilities in funding and liquidity, and (5) vulnerabilities in structural dimensions. Based on each type of vulnerability, recommendations are provided for the macroprudential policy toolkit in Finland.

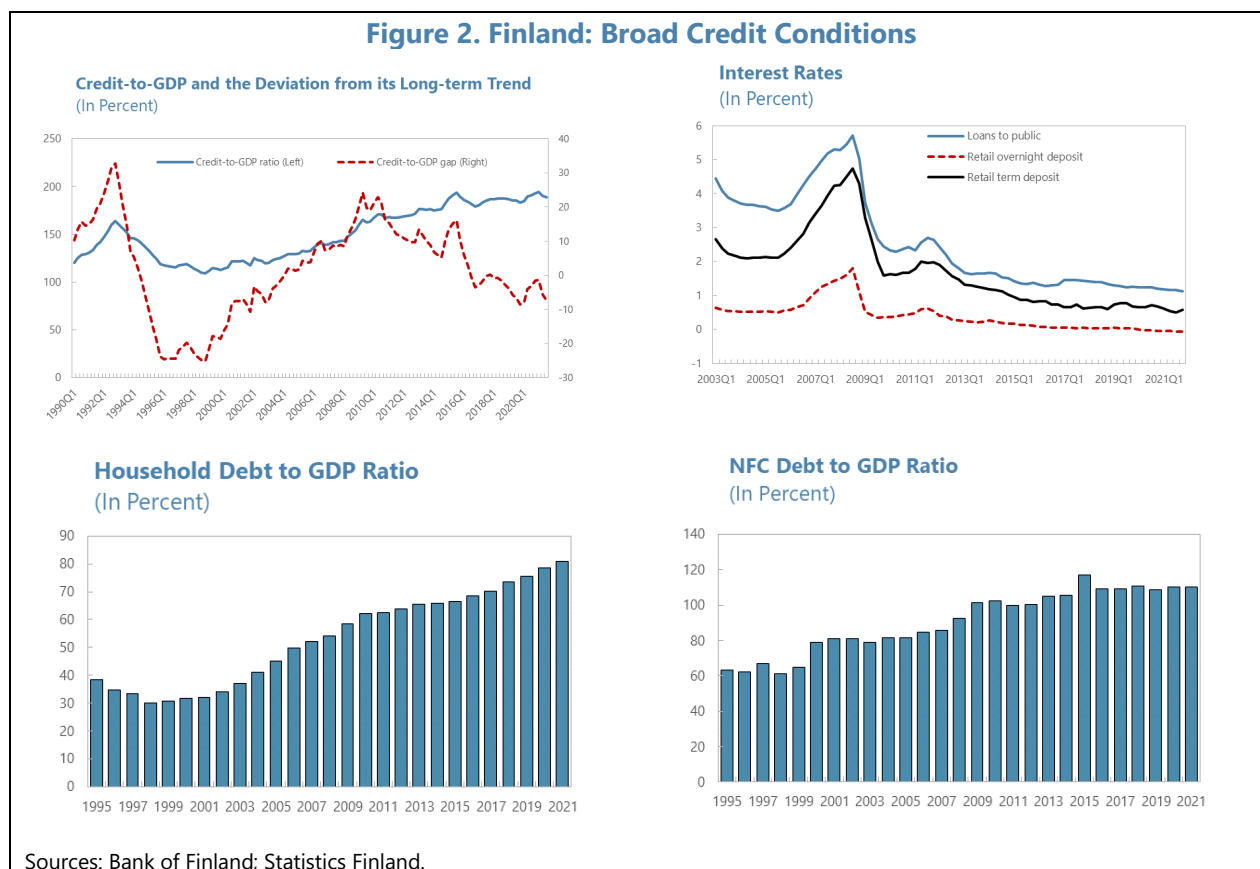
**36. In Finland, the authorities should ensure that the macroprudential toolkit includes a sufficiently broad set of instruments that can be readily deployed when needed.** The set of macroprudential tools available for the FIN-FSA Board is determined by the legislature (Table 2). The introduction of new instruments requires changes to the law, and this can take time. It is therefore important, for precautionary reasons, to have a proactive approach to ensure tools are sufficient.

**Table 2. Finland: Current Macroprudential Tools and Settings<sup>1</sup>**

Instrument	Status	Recent Changes
<b>Broad-based Tools</b>		
CCyB	Set at 0 percent	Have not imposed a positive buffer requirement.
CCoB	Set at 2.5 percent	Introduced as of January 1, 2015.
<b>Household Sector Tools</b>		
Cap on LTV <sup>2</sup>	85 percent (95 percent for first-time home buyers)	Lowered by 5 percentage points as of October 1, 2021.
Household sector capital requirements	Inactive	A minimum risk weight level of 15 percent for mortgage loans expired on January 1, 2021. <sup>3</sup>
<b>Structural Tools</b>		
O-SII buffers	Nordea Group: 2.5 percent OP Group: 1.5 percent Municipality Finance: 0.5 percent	Increased O-SII buffers of Nordea and OP Group by 0.5 percent, as announced on June 28, 2022, and effective on January 1, 2023.
SyRB	Inactive	As of April 6, 2020, all the SyRB was released.
<sup>1</sup> As for the liquidity tools, LCR and NSFR are in place in Finland, while the authorities do not consider these as macroprudential instruments. <sup>2</sup> Strictly speaking, the FIN-FSA uses a LTC cap, which includes a wide range of collateral in addition to the dwelling to be purchased by the borrower. The issue arising from the definition of collateral is discussed in "Vulnerabilities from Residential Housing and Household Sector" (see Section B of Systemic Risk and Macroprudential Tools). <sup>3</sup> The FIN-FSA Board decided not to extend the risk weight floor requirements due to the marginal impact of the measure. The average risk weight for Finnish mortgage loans exceeds the 15 percent limit due to stricter microprudential model constraints and additional requirements introduced in the last few years.		

## A. Vulnerabilities from Broad-Based Credit Booms

**37. While credit indicators are not signaling risk of a broad-based credit boom overall, the credit-to-GDP ratio has been rising gradually mainly due to increasing in household indebtedness (Figure 2).** On the one hand, the credit-to-GDP ratio has been rising gradually. This is mainly driven by an increase in household indebtedness, supported by the low interest rate environment. On the other hand, the credit-to-GDP gap, which is the deviation of the credit-GDP ratio from its long-term trend, has been decreasing, reflecting a slowdown of credit growth since the global financial crisis. The Basel III leverage ratio in the banking system is around six percent, which is above the regulatory minimum of three percent.



**38. The CCyB has been kept at zero percent because credit indicators have not shown signs of excessively rapid credit growth since its introduction in 2015.** The Act on Credit Institutions requires that FIN-FSA set the CCyB rate (between 0 percent and 2.5 percent) every quarter, in cooperation with the MoF, the BoF, and the FFSA based on developments in the credit-to-GDP gap and other complementary information (The Act on Credit Institutions, Chapter 10, Sections 4-6). The criteria to calculate the CCyB and the publications of the decisions made are

stipulated in MoF Decree 1029/2014.<sup>23</sup> Although the authorities have recently adjusted the set of indicators,<sup>24</sup> they should keep an open mind about alternative approaches to estimating the credit gap, including by recognizing possible structural breaks in credit cycles.<sup>25</sup>

**39. The COVID-19 pandemic showed that the banking system needs to have releasable buffers readily available.**<sup>26,27</sup> To mitigate the effects of COVID-19 pandemic, the Board of the FIN-FSA released all SyRB requirements applying to credit institutions in April 2020. Moreover, the O-SII buffer for OP Financial Group was lowered by 1 percent, thereby reducing capital requirements to all credit institutions by the same amount. The prompt relaxation of capital buffers was appropriate to support the provision of credit during the COVID-19 crisis. However, the relaxation of the CCyB (if it had been available) or of the SyRB (without releasing the O-SII buffers at the same time) would have been more appropriate. This is because the CCyB is designed to be the shock absorber of credit cycles, and the SyRB is releasable when the macro-financial risks it aims to cover are materialized, while the importance of “too-big-to-fail” issues, the main aim of imposing O-SII buffers might not change in such circumstances.

**40. To better prepare for an unexpected economic downturn, it is desirable to introduce a positive neutral CCyB in Finland over the medium term.**<sup>28</sup> Traditionally, the CCyB is activated when the credit-to-GDP gap is positive, based on the assumption that the credit cycle is symmetric. However, the COVID-19 pandemic demonstrated that a shock to the banking system can be asymmetric, and a sudden credit contraction is possible even when the credit cycle is in a neutral phase. In the event of an adverse shock, it would be useful to have a positive CCyB that could be

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<sup>23</sup> In this decree, the credit-to-GDP gap is described as the primary basis. Additional factors, such as the development of real estate price and sector-specific or aggregate lending, could be taken into account, which is in line with the BCBS (2010) “[Guidance for national authorities operating the countercyclical capital buffer.](#)”

<sup>24</sup> The BoF revised a set of indicators by, for example, using alternative definitions of credit so that they do not undergo major statistical revisions. This is a technical improvement rather than a substantial change requiring revision in a Decree.

<sup>25</sup> See, for example, Drehmann, and Tsatsaronis (2014). “[The Credit-to-GDP Gap and Countercyclical Capital Buffers: Questions and Answers.](#)” BIS Quarterly Review. This paper describes how statistical revisions (e.g., the Japanese total credit series in 1998) and economic factors (e.g., credit of Indonesia during the Asian crisis) could create jumps in the credit-to-GDP series. While there are no one-size-fits-all solutions, it would be useful to estimate the credit caps over different approaches by changing smoothing parameters and augmenting historical observations if the time series is long enough.

<sup>26</sup> As for the usefulness of releasable buffers, see, for example, [Berrospide et al. \(2021\)](#), [BCBS \(2022\)](#), [BCBS \(2021\)](#), [Couaillier and others \(2022a\)](#), and [Couaillier and others \(2022b\)](#).

<sup>27</sup> As noted by the BCBS, “The Committee supports and sees benefits in the ability of authorities to set a positive cycle-neutral CCyB rate on a voluntary basis.” See Newsletter on positive cycle-neutral countercyclical capital buffer rates (bis.org).

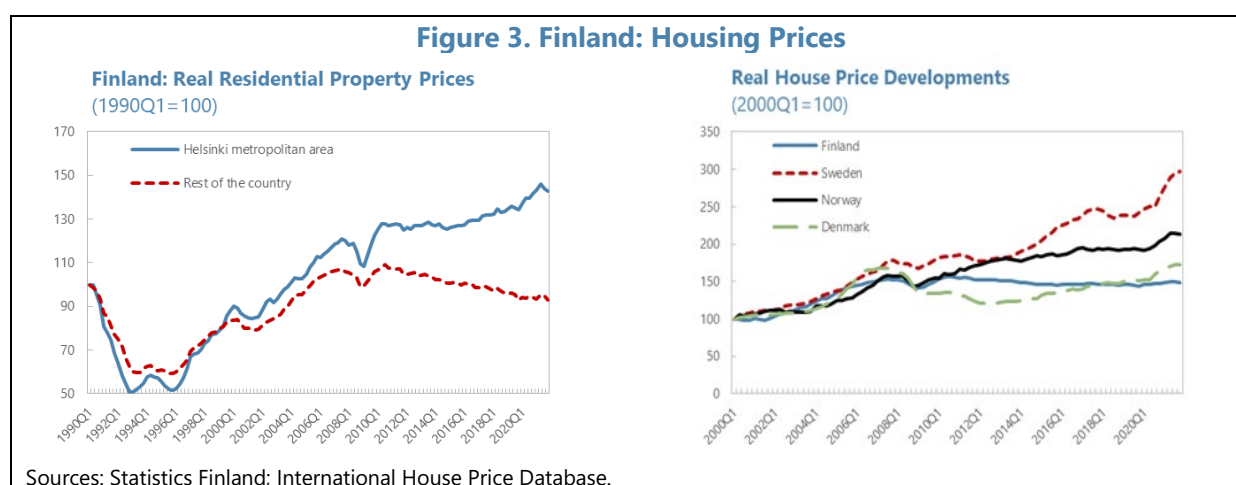
<sup>28</sup> As for the configuration of the use of capital buffers in Europe, Norway and Sweden use CCyB, SyRB, and O-SII buffers, while other countries, such as Estonia, Ireland, and Netherlands have removed SyRB and transitioned using only the CCyB and O-SII buffer framework.

released to prevent a possible credit crunch.<sup>29</sup> The estimated positive neutral CCyB for the representative Finnish bank is 0.75 percent of risk-weighted assets (see Box 1).<sup>30</sup>

## B. Vulnerabilities from Residential Housing and the Household Sector

### 41. Although house prices have not increased much in Finland as a whole since 2008, prices have increased significantly in Helsinki and other metropolitan areas (Figure 3).

Compared to peer countries, some of which are showing signs of house price overvaluations, price increases in Finland have not been excessive overall. Finnish house prices, however, show regional divergence, with rapid increases in Greater Helsinki area and other large cities, and declines in rural areas. This reflects increased demand in the urban areas, consistent with intermunicipal migration in Finland.



**42. The steady increase in household indebtedness is of concern.** Household debt as a percentage of disposable income reached record levels in 2021, and the maturities of loans also rose (Figure 4). The increase in household debt was, in part, fueled by the low interest rate environment from the GFC until Q2 2022, which helped keep interest rate burdens at historically low levels. Although DTI ratios in Finland are moderate compared to other countries in the Nordic-Baltic region, Finnish borrowers are vulnerable to sharp increases in benchmark interest rates. This is because 95 percent of housing loans are at variable rates and only 28 percent of those come with interest rate caps that protect borrowers from sudden increases in rates (at least temporarily). In the current environment of rapidly tightening monetary policy and tighter financial conditions, high indebtedness and a high share of variable rate loans could undermine the debt repayment capacity of Finnish households, with potentially systemic implications.

**43. Within housing-related loans, housing company loans have increased rapidly and could be a cause for concern.** The share of housing company loans in the total stock of housing-

<sup>29</sup> Although the FIN-FSA has recently adjusted the set of indicators for calibrating the CCyB to make them more sensitive to a buildup of risks, changes to the law are still needed to impose a positive neutral CCyB.

<sup>30</sup> Derived assuming there will also be a Systemic Risk Buffer of 2 per cent which is releasable, too, so the overall policy space for relaxation of buffers amounts to 2.75.



related loans rose from 6 percent in 2004 to 16 percent in 2021. Housing company loans are used to finance both renovations to old residential buildings and construction of new residential units, including apartments. The average interest rate on loans to housing companies has been lower than loans to construction companies, leading to a higher demand for housing company loans. Although the FIN-FSA may issue regulations on the regular provision of information on supervised entities, the rapid increase of housing company loans, with a higher complexity and opacity than traditional mortgage loans, warrants close monitoring. In addition, since the FIN-FSA does not observe the lending standards of housing companies such as information on shareholders, these loans to households could be riskier than normal mortgage loans from banks. Furthermore, if one of the shareholders (i.e., a resident in a building) is unable to pay the monthly charges, and other shareholders are jointly liable, this could jeopardize loan repayments by the remaining households in a period of financial stress.<sup>31</sup> Moreover, the prevalence of housing companies creates opacity in banks' monitoring of borrowers' liabilities and ability to repay their loans.

**44. Against the backdrop of the potential systemic risk arising from the household indebtedness, the Finnish authorities have taken several actions to contain vulnerabilities.**

- **The maximum LTV ratio for housing loans was reduced to 85 percent on October 1, 2021, except for first-time home buyers.** The LTV cap, which limits the loan size relative to the collateral value,<sup>32</sup> was first introduced as a binding limit in 2016. During the COVID-19 pandemic, the LTV limit was raised to support the flow of credit to the real economy and to bolster the proper functioning of the housing market. In Finland, the LTV ratio, set by the FIN-FSA Board, must be between 80-90 percent (85-95 percent for the first-home loans).
- **The government has published proposals to set a maximum maturity for housing loans, as well as several measures to limit housing company loans.** On June 16, 2022, the MoF published its legislative proposal, which included: (i) a maximum maturity of 30 years for housing loans and housing company loans,<sup>33</sup> (ii) an LTV cap of 60 percent for housing company loans (new buildings), (iii), an amortization requirement for housing company loans (new buildings) during the first years after completion of the building. This new regulation is expected to be in force in mid-2023.

**45. The FIN-FSA has issued a nonbinding recommendation to contain excessive risk taking.** At its meeting on June 27, 2022, the FIN-FSA Board issued a recommendation that mortgage borrowers' total loan-servicing costs should be no more than 60 percent of their net income (referred to as "stressed" DSTI ratio). In this calculation, the maturity of loans should be no more than 25 years and the interest rate no less than 6 percent, except for loans with long-term

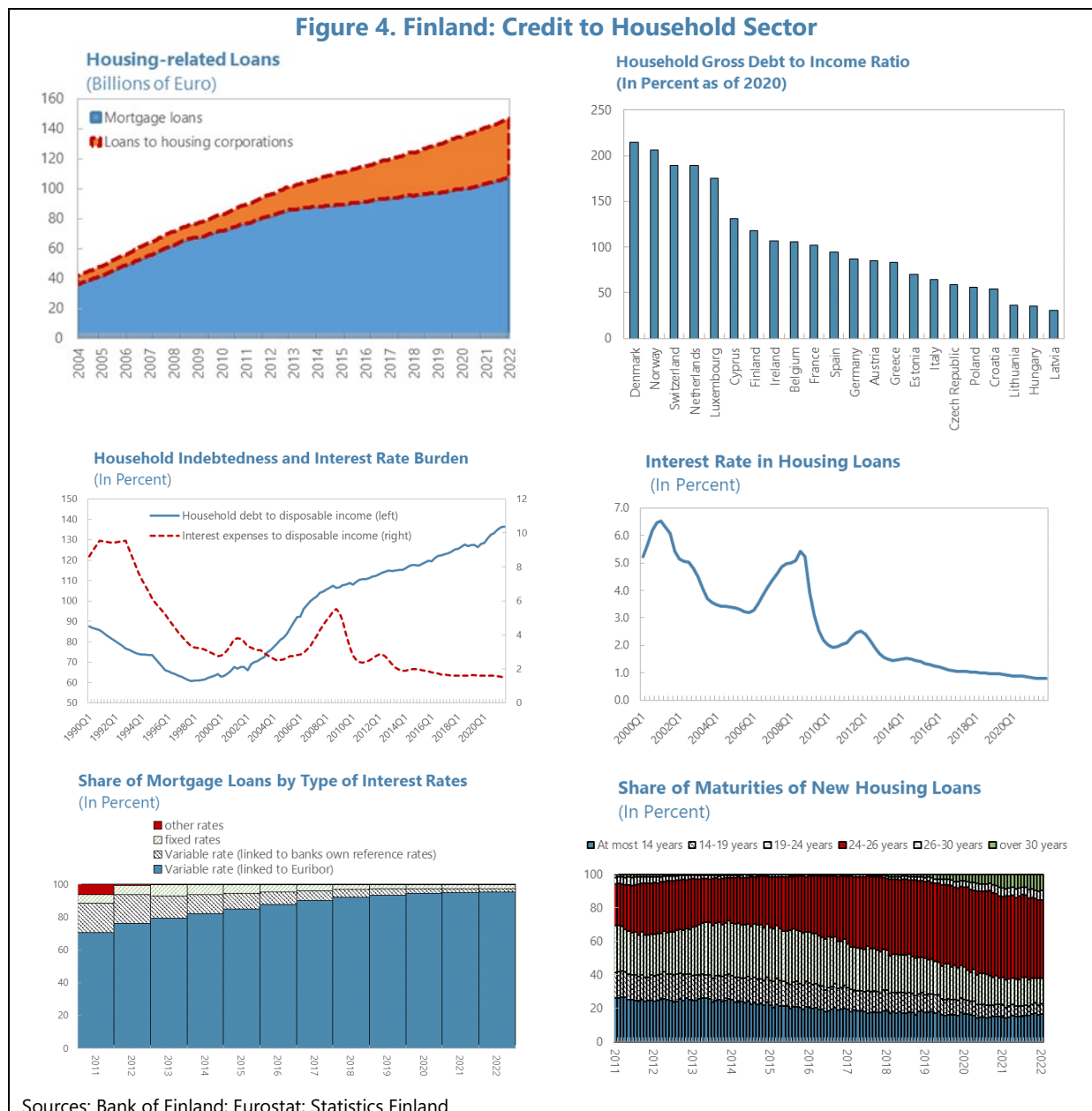
<sup>31</sup> Remaining shareholders can take possession and rent or sell the apartment if one shareholder cannot pay his or her charges. It is probable, however, that these shareholders may not be able to find renters or buyers in stressed times because of weak demand. This could further exacerbate the situation because remaining shareholders may also struggle to cover their costs.

<sup>32</sup> The issue as for the definition of collateral is discussed in the next paragraph.

<sup>33</sup> Lenders may exceed the maximum maturity in 10 percent of new lending.



interest rate hedges and fixed-rate loans. The recommendation will enter into force on January 1, 2023. This recommendation is an update to the previous general recommendation.<sup>34</sup>



**46. The macroprudential toolkit should be expanded to include tools based on borrowers’ eligibility.** The only specific tool in place for the household sector is the LTV cap (and the nonbinding recommendations). In housing boom-bust cycles, the fluctuation in housing prices tends

<sup>34</sup> The FIN-FSA already issued a similar recommendation in 2010 that banks should calculate applicant’s available funds in 6 percent interest rate and maturity no more than 25 years. This new recommendation formalizes the past one by (i) including overall household debt rather than each loan, (ii) setting the DSTI ratio no more than 60 percent, and (iii) setting “speed limits:” a stressed DSTI ratio over 60 percent should account for no more than 15 percent of new housing loans by each lender.

to be larger than income. Consequently, an LTV cap may not be an effective tool to contain risks. In this regard, income related borrower-based measures such as DTI or DSTI limits are useful because debt levels of households are limited by current income. Indeed, the share of higher DTI households in the distribution of mortgage borrowers is larger than that of higher LTVs in Finland recently (Figure 5).

**47. Introducing DTI and DSTI limits in the macroprudential toolkit for the Board of the FIN-FSA requires legislative change.** The sectoral SyRB is an option if such tools are not available. The CRDV framework enables the Finnish authorities to introduce a sectoral SyRB imposed on specific sectors such as high DTI, DSTI, or in specific geographic locations.<sup>35</sup> However, a DTI or DSTI is preferable to a sectoral SyRB because DTI/DSTI are directed at borrowers and are more effective in preventing leakages. A sectoral SyRB is also a further capital buffer on top of several capital buffers already in place, while DTI and DSTI do not require additional capital buffers.

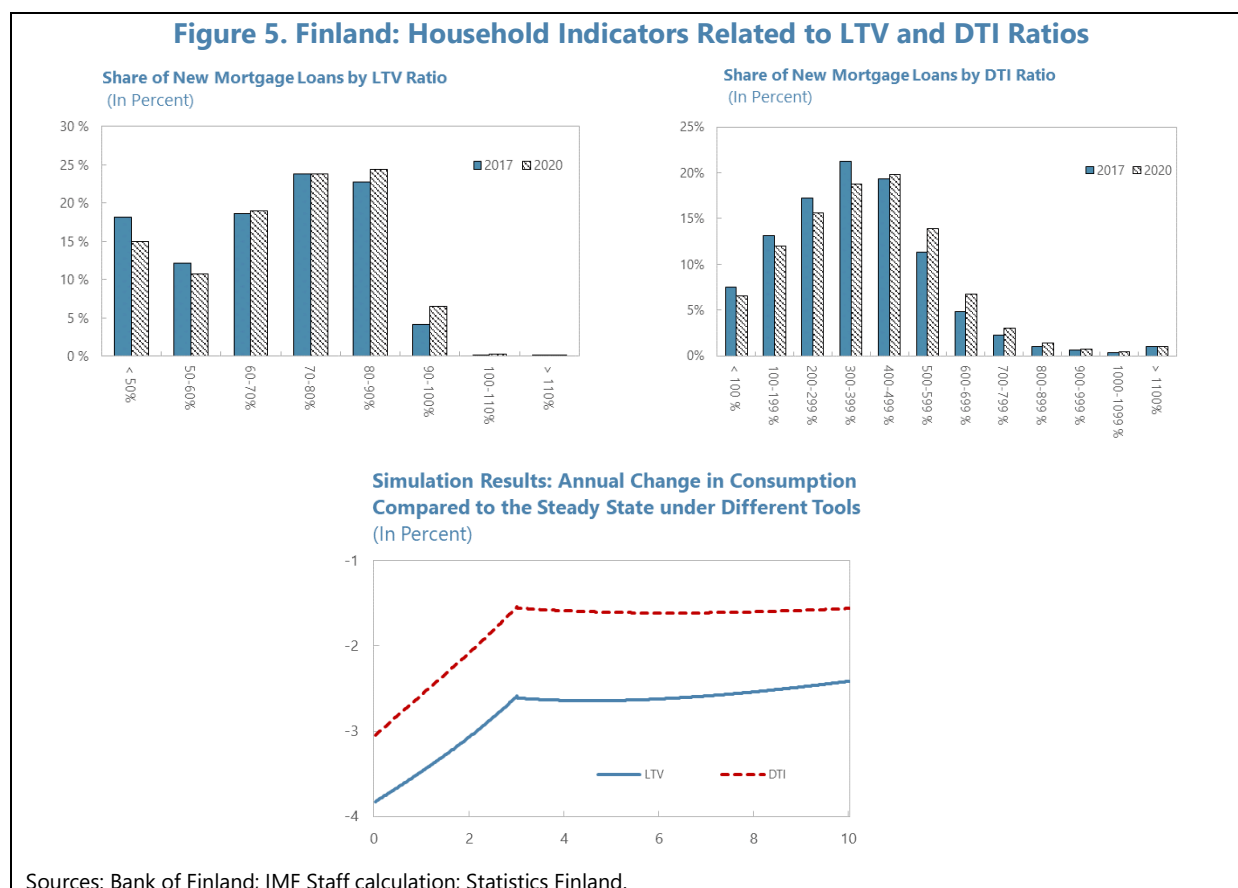
**48. Based on the analytical work for this FSAP on the usefulness of borrower-based macroprudential policy tools in Finland, the introduction of income-related borrower-based measures could be beneficial.** To quantify the effectiveness of different tools, the analysis uses a heterogeneous agent model, in which households endogenously chose their holdings of housing and liquid assets under two scenarios of borrowing limits: the LTV ratio and the DTI ratio. When an unexpected negative income shock hits the economy, we find that a larger and persistent consumption drop is observed in the LTV scenario compared to the DTI scenario (Figure 5).

**49. Our results indicate that introducing a DTI limit is beneficial to mitigate the decrease in consumption in recessions by restricting highly leveraged households in Finland.** LTV caps make it possible to purchase larger houses regardless of income and allow households to increase leverage, leading to larger debt burdens. When a DTI cap is in place, household debt is tied to current income and the reduction of consumption is mitigated by lower leverage. While there is no significant difference in the consumption of lower-income households under an LTV or DTI regime, for middle income households, a DTI limit is preferred. This is because middle-income households are more likely to become low-income households (e.g., unemployed) when negative income shocks hit the economy. The resulting decrease in middle income households' consumption is larger in the LTV scenario (compared to DTI) due to the higher leverage. The details of the modeling and results are described in a forthcoming companion IMF working paper.

**50. The definition of LTC used in Finland should also be reviewed.** Although the LTC cap in Finland is used in a similar fashion to the LTV caps used in other countries, the calculation of the value basis for collateral is lenient: besides the dwelling to be purchased, a wide range of other collateral offered by the borrower (and accepted by the lender) can also be taken into account. While the FIN-FSA has proposed to the MoF to limit collateral in accordance with the ESRB recommendation to limit the collateral to mortgages in the legislation, there are no specific plans to revise the definitions. An LTC ratio with additional collateral undermines the effectiveness of the

<sup>35</sup> Although house prices have been rising faster in the greater Helsinki area, an SyRB based on geographic location could create regional distortions and it would be beneficial to use alternative measures such as DTI or DSTI.

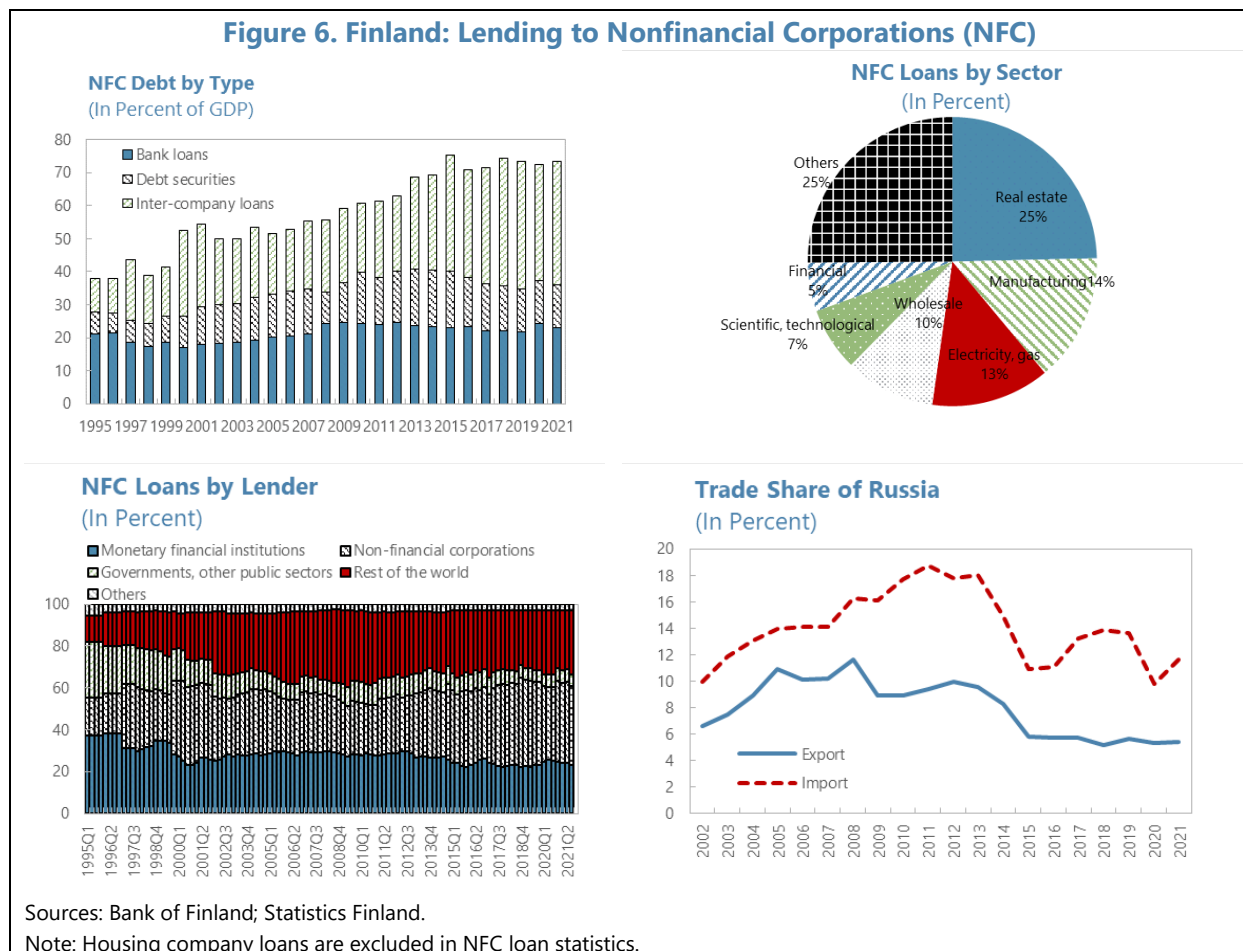
instrument to contain a housing market boom. The authorities should assess whether it is appropriate to include collateral other than the dwelling, and the right limit in LTC cap based on the granular data analysis.



## C. Vulnerabilities from Corporate Sector

**51. Bank exposures to the NFC sector have been stable and do not appear to be excessively high at this juncture (Figure 6).** As a percentage of GDP, bank loans to NFCs increased slightly in the leadup to the GFC but have since held steady at around 20 percent. These loans are mainly to the real estate, manufacturing, and electricity and gas sectors (half of the loans). The real estate sector accounts for a quarter of the corporate loans. This indicates the importance of monitoring the vulnerabilities coming from real estate, especially given the high indebtedness of households also linked to residential real estate.<sup>36</sup>

<sup>36</sup> Some corporate sector loans are related to household indebtedness because they originate as housing company loans. Housing company loans are classified as real estate loans to the NFC sector because the debtor is the housing company. However, most of these loans are related to renovations and new construction of residential real estate, and thus, de facto the debtors are households rather than NFCs. This should be noted when classifying loans as either household sector or corporate sector.

**Figure 6. Finland: Lending to Nonfinancial Corporations (NFC)**

**52. While NFCs have increasingly relied on intercompany loans, they do not appear to pose acute systemic risks to the financial sector at this juncture.** As a percentage of GDP, intercompany loans increased from 10 percent to 40 percent between 1995 and 2021. This intercompany lending reflects internal funding (e.g., inter-company loans and loans between related companies). Risks to the banking sector are assessed as being manageable because this intercompany lending does not increase the overall exposure of banks to NFCs. However, given this rapid increase, it would be beneficial for the authorities to gather more granular data on intercompany lending to get a better understanding of the situation and assess whether vulnerabilities could emerge.

**53. The authorities need to remain vigilant to risks from the war in Ukraine.** The direct exposure of Finnish banks to Russian corporates is limited.<sup>37</sup> In terms of economic ties to Russia, around 6 percent of exports and 12 percent of imports are related to Russian trade. However, the share to Russia declined after 2014 when Russia annexed the Crimean Peninsula, and the overall adverse effect due to the decline in trade seems to be limited since most of the firms can find substitute trading partners. The most acute concerns stem from indirect effects—higher energy

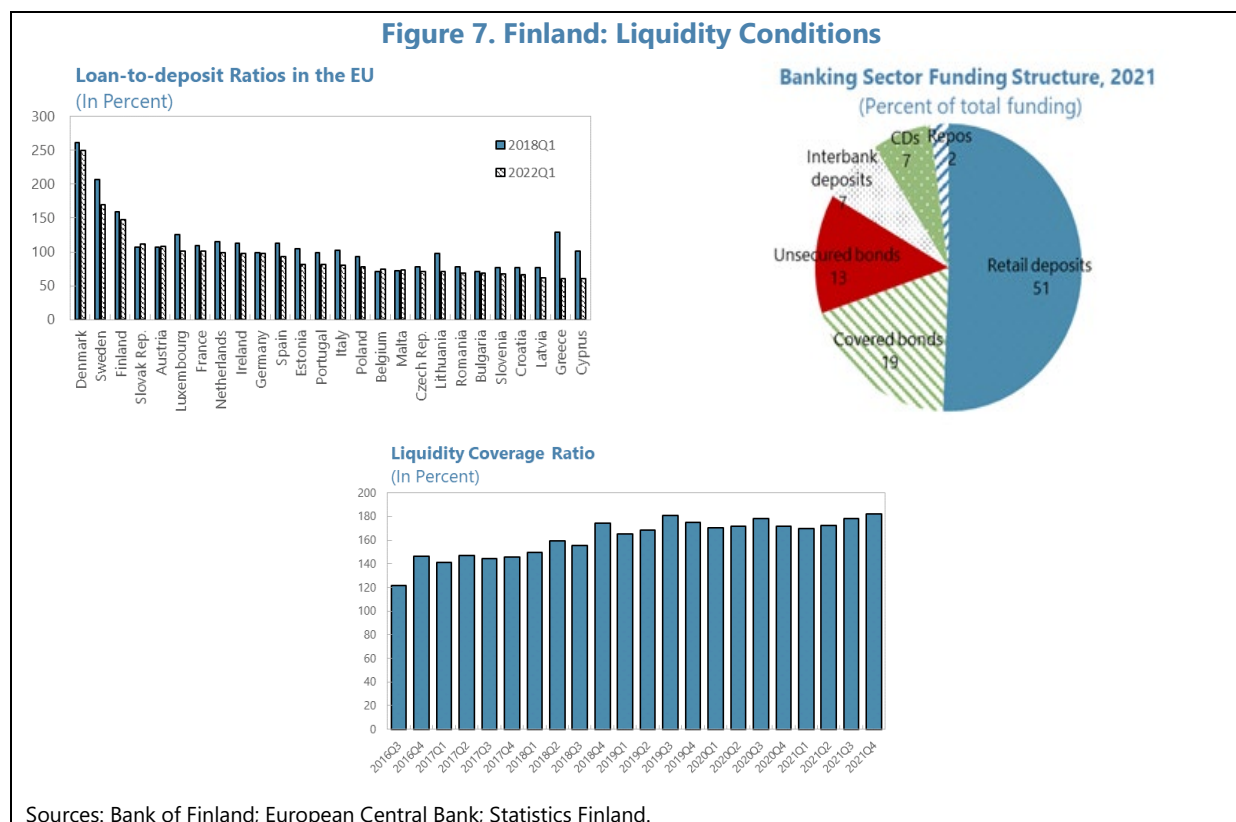
<sup>37</sup> Financial institutions' direct exposure to Russia is less than 0.1 percent of total loans in Finland.

prices and higher costs of raw materials (e.g., metals), which could weaken the profitability of firms. Some sectors are particularly vulnerable, such as energy intensive firms and the pulp and travel industries located in eastern Finland. The authorities should keep monitoring the risks arising from the impact from the war in Ukraine, paying particular attention to the heterogeneous effects on the corporate sector depending on the industries and trade exposure.

## D. Vulnerabilities from Funding and Liquidity

**54. The Finnish banking sector has relied on wholesale funding.** Retail deposits account for only half of banks' funding structure. The other half of their funding is wholesale funding, including covered bonds, unsecured bonds, and interbank deposits (Figure 7). The loan-to-deposit ratio was around 147 percent in Q1 2022, which is among the highest in the EU. Nevertheless, banks have improved their funding structure to rely more on deposits, which were around 38 percent in 2014.

**55. The banking system has sufficient aggregate liquidity and stable funding, but this could be insufficient during periods of stress.** The average liquidity coverage ratio (LCR) in the total banking system is around 182 percent as at Q4 2021, which is well above the regulatory requirement of 100 percent. Also, banks must maintain a net stable funding ratio (NSFR) above 100 percent, as of June 28, 2021. While funding structures vary depending on their business operations, the average NSFR is around 117 percent as of Q4 2021, well above the criteria. However, the work on bank liquidity stress testing in TN on Systemic Risk points to Finnish banks having insufficient liquidity to face adverse funding liquidity shocks.



## E. Vulnerabilities in Structural Dimensions

### 56. The financial system in Finland is highly concentrated and dominated by a few banks.

Total banking sector assets were EUR 870.4 billion at end-2021, which accounts for 346 percent of GDP. Banks are the primary form of financing in Finland, especially for home purchases. The banking system continues to be highly concentrated: the three largest banks—Nordea Bank, OP Financial Group, and Municipality Finance—account for 93 percent of domestic banking assets.

### 57. The FIN-FSA Board has identified significant credit institutions within the Finnish financial system (“other systemically important institutions,” or O-SIIs) and has set additional capital requirements (O-SII buffers).

The FIN-FSA is required to identify the group of O-SIIs on an annual basis.<sup>38</sup> O-SIIs refer to credit institutions with (i) total balance sheets of a minimum EUR 1 billion and (ii) whose insolvency would jeopardize the stability of the financial markets in Finland or in another EU Member State, based on the Guidelines of the European Banking Authority. The identification of O-SIIs is based on four core criteria and ten related indicators (Table 4). With the redomiciliation of Nordea, the relative importance of such credit institutions decreased considerably in 2018—even though their risk exposure, the scope and nature of their activities, and their absolute importance remained unchanged. To ensure that the systemic importance of O-SIIs is assessed in a consistent manner, the threshold of systemic importance for these institutions was lowered from 3.5 percent to 2.75 percent in 2018.

**Table 3. Finland: Criteria for Assessing Systemic Importance**

Criteria	Indicator	Weight (percent)
<b>Size</b>	Balance sheet total	25
<b>Importance/ Substitutability</b>	Value of domestic payment transactions	8.33
	Private sector deposits from depositors in the EU	8.33
	Private sector loans to recipients in the EU	8.33
<b>Interconnectedness</b>	Intra-financial system liabilities	8.33
	Intra-financial system assets	8.33
	Debt securities outstanding	8.33
<b>Complexity</b>	Value of OTC derivatives (notional)	8.33
	Cross-jurisdictional liabilities	8.33
	Cross-jurisdictional claims	8.33

### 58. Three banks are identified as O-SIIs in Finland and the FIN-FSA Board recently raised the O-SII buffers for two institutions.

The calculation of O-SII scores for all credit institutions by the FIN-FSA finds O-SII scores for three banks exceed the lowest threshold of 2.75 percent: Nordea, OP Financial Group, and Municipality Finance Plc. Based on the annual assessment of the risk, the FIN-FSA Board announced on June 28, 2022, that Nordea’s O-SII buffer rate will rise to 2.5 percent (from 2.0 percent) and OP Financial Group’s will rise to 1.5 percent (from 1.0 percent). The buffer requirement for Municipality Finance Plc will remain unchanged at 0.5 percent. The decision will

<sup>38</sup> See Chapter 10, section 8 of the Credit Institutions Act.

enter into force on January 1, 2023. There are currently no global systemically important institutions (G-SII) in Finland.

**59. While systemic risk buffers (SyRB) were introduced to contain non-cyclical systemic risks, they were released after the COVID-19 pandemic and have not yet been reinstated.** The SyRB aims to address the non-cyclical dimension of risk not covered by other macroprudential buffers. Legislation enabled the FIN-FSA Board to impose the SyRB since January 2018. The Board is expected to make a decision on the SyRB on a yearly basis during the first six months of each year. The Finnish authorities have used this buffer to address issues like credit institutions' risk concentrations and interconnectedness, and the indebtedness of credit institutions' largest customers, namely households. However, in April 2020, the FIN-FSA Board released all SyRB requirements applying to credit institutions registered in Finland to mitigate the negative effects of the COVID-19 pandemic. Further, in June 2022, the Board decided not to reimpose the SyRB given that the war in Ukraine had further weakened the economic outlook for Finland and Europe, increased uncertainty about banking system operations, and intensified the risk of credit losses.

**60. The new CRDV/CRR2 framework provides an opportunity to reconsider the configuration of capital-based macroprudential tools.** Under the CRDIV framework, the SyRB had been imposed based on "long-term, non-cyclical" risks to the banking system. In that regime, the SyRB was to some extent overlapping with the O-SII buffer ("too-big-to-fail" issues), which was capped at 2 percent; and the larger of the two requirements was binding. Under CRDV/CRR2, the SyRB is additive to the O-SII buffer, and the use of a sectoral SyRB to build resilience against specific exposures is permitted. Thus, the authorities need to clarify the use of SyRB to address issues other than those covered by O-SII buffers, namely too-big-to-fail issues, including interconnectedness with the rest of the financial system.<sup>39</sup>

**61. It is desirable to reintroduce the SyRB once circumstances allow.** The authorities' decision not to reimpose the SyRB under the uncertainties caused by the war in Ukraine is appropriate at this juncture. However, given macro-financial risks, such as the growing indebtedness of households, the authorities should reactivate the SyRB once economic and financial developments allow.

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<sup>39</sup> European legislation explicitly prohibits from the use of O-SII and SyRB to account for the same risks (Directive 2013/36/EU of the European Parliament and of the Council of June 26, 2013, Art. 133, 7, 8c, and 9f).



### Box 1. Finland: Calibration of Capital Buffers Using Stress Test Results

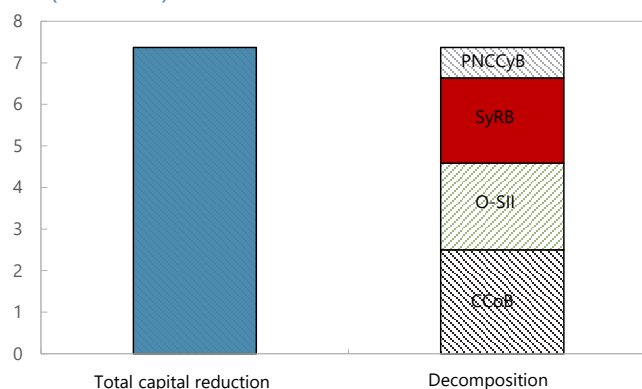
This box shows the calibration of a positive neutral CCyB and the SyRB using the FSAP's bank stress testing exercise. The SyRB covers noncyclical systemic risk in Finland, such as high and increasing household indebtedness. The positive neutral CCyB is the cyclical component of the releasable buffer when the economy is in a neutral phase of the financial cycle. The COVID-19 pandemic demonstrated that shocks to the banking system can be asymmetric. Thus, a positive neutral CCyB could be used as a releasable buffer when a sudden credit crunch is imminent. There is no "one-size-fits-all" approach to calibrate the best configuration of the two buffers so far. In this box, the FSAP's solvency stress testing and sensitivity analysis are used to estimate the amount of these two capital buffers.<sup>1</sup>

First, the solvency stress test indicates the total amount of capital buffer that banks need to prepare by estimating the drop in the CET1 ratio for each year in the simulation horizon.<sup>2</sup> Specifically, assuming that banks desire to have a constant buffer in excess of required capital levels, that the minimum capital requirement is never breached, and that the credit cycle is currently on neutral ground, the biggest gap between the CET 1 ratio in year 0 (starting point) and the adverse scenario sets the total amount of required macroprudential capital buffers.<sup>3</sup> The 2022 FSAP solvency stress test results note that the capital reduction is largest in year 4, which is 7.4 percent in terms of risk-weighted assets (see TN on Systemic Risk Analysis and Stress Testing).

Second, the SyRB is estimated using a sensitivity analysis: the estimated required level is the capital reduction which arises solely from macro-financial vulnerabilities of the Finnish financial system aimed to be covered by SyRB. Here, we assume that SyRB covers vulnerabilities from the exposures to household credit and property prices in Finland. Specifically, we consider the scenario where households face greater property price declines under the adverse scenario. In this sensitivity analysis we use the baseline scenario other than the above-mentioned elements (greater property price declines). The sensitivity analysis shows that capital reduction in year 4 compared to year 0 is around 2.0 percent, which indicates the amount of SyRB.

Finally, taking the other macroprudential buffers—the capital conservation buffer (CCoB) and O-SII buffer—as given, and using the estimated SyRB, the positive neutral CCyB can be estimated from the residual. Since the CCoB is 2.5 percent, and the O-SII buffer for the consolidated bank in the stress test is 2.1 percent, the positive neutral CCyB is estimated at around 0.75 percent. In this estimation of the configuration of buffers, we assume (for simplicity) that all exposures are domestic in the consolidated banking capital. However, banks possess foreign exposures, and thus, their capital requirements also depend on the reciprocity mechanism for the CCyB in their actual balance sheets. For example, consider the case where the foreign exposure to country X is 40 percent of the total, and suppose 1.0 percent CCyB is set at country X. In this case, CCyB reciprocity requires 0.4 percent of capital. This indicates that the positive neutral CCyB should be set at around 0.6 percent to cover the 60 percent of domestic exposure. Thus, due to the foreign exposure of banks, the estimation also depends on the composition of exposures and on foreign authorities' CCyB choice.

**Total capital reduction in stress testing and its decomposition to each buffers**  
(In Percent)



<sup>1</sup> Risk arising from concentrated banking sectors was covered by SyRB in CRDIV framework but is now primarily covered by the O-SII buffer in CRDV, where the SyRB is additive to the O-SII buffer.

<sup>2</sup> A recent study discusses how banks become defensive, and procyclical effects on lending start to set in, as their actual capital starts to edge close to the combined regulatory requirement. This behavior indicates that even larger buffers may be useful to prevent this negative effect. See [Couaillier et al. \(2022a\)](#).

<sup>3</sup> The size of the buffer depends on the severity of the stress test, which hinges on the authorities views on how large shocks banks need to be prepared.