INTERNATIONAL MONETARY FUND

IMF Country Report No. 22/263

GERMANY

FINANCIAL SECTOR ASSESSMENT PROGRAM

August 2022

TECHNICAL NOTE—MACROPRUDENTIAL POLICY FRAMEWORK AND TOOLS

This Technical Note on Macroprudential Policy Framework and Tools for the Germany FSAP 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 February 2022.

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Price: $18.00 per printed copy

International Monetary Fund
Washington, D.C.

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TECHNICAL NOTE

MACROPRUDENTIAL POLICY FRAMEWORK AND TOOLS

Prepared By
Monetary and Capital Markets Department

This Technical Note was prepared by IMF staff in the context of the Financial Sector Assessment Program in Germany. 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

BaFin	Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*)
BMF	Federal Ministry of Finance (*Bundesministerium der Finanzen*)
CCB	Capital Conservation Buffer
CCyB	Countercyclical Capital Buffer
CRD	Capital Requirements Directive
CRE	Commercial Real Estate
CRR	Capital Requirements Regulation
EBA	European Banking Authority
ECB	European Central Bank
ESCB	European System of Central Banks
ESRB	European Systemic Risk Board
FinStabDEV	Financial Stability Data Collection order (*Finanzstabilitätsdatenerhebungsverordnung*)
FinStabG	Financial Stability Act (*Finanzstabilitätsgesetz*)
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSC	Financial Stability Committee (*Ausschuss für Finanzstabilität*) of Germany
FSSA	Financial System Stability Assessment
G-SII	Global Systemically Important Institution
IPS	Institutional Protection Scheme
IRB	Internal Ratings-Based approach
KAF	Coordinating Committee for Financial Stability (*Koordinierungsausschuss für Finanzstabilität*)
KWG	German Banking Act (*Kreditwesengesetz*)
LCR	Liquidity Coverage Ratio
LRB	Leverage Ratio Buffer
LSI	Less Significant Institution
M-MDA	Maximum Distributable Amount related to MREL

MPM	MacroPrudential Measure
MREL	Minimum Requirement for own funds and Eligible Liabilities
NBFI	Non-Bank Financial Institution
NDA	National Designated Authority
NMA	National Macroprudential Authority
NSFR	Net Stable Funding Ratio
O-SII	Other Systemically Important Institution
RRA	Risk Reduction Act (*Risikoreduzierungsgesetz*)
RRE	Residential Real Estate
SI	Significant Institution
SolvV	Solvency Regulation (*Solvabilitätsverordnung*)
SRB	Single Resolution Board
SSM	Single Supervisory Mechanism
SSyRB	Sectoral Systemic Risk Buffer
SyRB	Systemic Risk Buffer
WoImmoDarlRV	Ordinance on macroprudential risks for residential real estate (*Wohnimmobiliendarlehensrisikoverordnung*)

EXECUTIVE SUMMARY[1]

1. Germany's macroprudential policy framework and toolkit are well developed. The FSAP found the institutional arrangements for macroprudential policy to be mostly sound and operating well. Capacity and expertise in risk monitoring is good, thanks to the analytical power and data access of the central bank, and close coordination between the macro- and microprudential arms of the financial supervisory authorities. Germany's macroprudential toolkit continues to develop. The principal outstanding task is to add powers to set caps on debt-to-income and debt service-to-income ratios on residential real estate loans to the already-established powers over loan-to-value ratios and amortization rates. These additions will place Germany's toolkit on a par with its peers.

2. Macroprudential action has been taken to counter rising cyclical vulnerabilities. The authorities learned from the previous policy cycle, when the build-up of releasable buffers came late and to a limited degree. Despite continued uncertainty around the course of the COVID-19 pandemic, in January 2022 they raised buffers in response to risks around real estate and interest rates, and exuberance in some corporate funding markets. The policy package locked in material quantities of bank capital and was well timed and well coordinated between the responsible agencies.

3. Additional macroprudential action will be required to counter vulnerabilities in residential real estate markets. The boom in German residential real estate prices has strengthened and broadened in recent years, and the pandemic did little to curb housing demand. Evidence of over-valuations coupled with accelerating growth in mortgage lending makes action on borrower-based macroprudential measures increasingly urgent. Action to limit loan-to-value ratios has been the subject of past recommendations for Germany by the ESRB (ESRB, 2022) and by the IMF (IMF Article IV Staff Report, 2018; see Part III.B). However, the legislated tools have not been activated to date.

4. The mission welcomed progress towards closing data gaps. Starting in mid-2023, and after a considerable delay, comprehensive and consistent data on residential real estate lending standards being collected by the Bundesbank will become available to support risk monitoring, and if needed the calibration of macroprudential tools. This information will make a crucial contribution to removing the remaining technical hurdles to activating legally-binding borrower-based measures as and when needed. Work towards an integrated database of financial stability statistics covering other risk areas (the "House of Microdata") is ongoing and is contributing to closing analytical gaps.

5. The FSAP recommends enhancing the legal underpinnings for borrower-based measures. The present risk environment presents a strong case for activating borrower-based

[1] The authors of this note are Roland Meeks and Alla Myrvoda (IMF), members of the FSAP team led by Ananthakrishnan Prasad. For enlightening discussions, we are grateful to the staff of the Bundesbank, the Federal Ministry of Finance, the Federal Financial Supervisory Authority, the European Central Bank, the Halle Institute for Economic Research, members of financial industry associations, members of the financial press, and academic experts.

macroprudential tools, if only as a precautionary measure. Early activation of legally-binding limits would help to avoid a build-up of unsustainable household leverage, and to create market benchmarks that would foster a level playing field. The FSAP advocates amendments to current and prospective legal powers for borrower-based measures to provide for their precautionary activation prior to a material deterioration in lending standards.

6. The FSAP recommends the authorities strengthen current guidance to banks on the standards expected for residential real estate lending. While there are some recent indications that some lenders may have lowered (tightened) average loan-to-value (LTV) ratios on new real estate lending, legally-binding limits on LTV ratios (or other similar instruments as they are introduced) should be considered as soon as any remaining technical and legal impediments are surmounted. The FSAP advocates, as an interim measure, explicitly discouraging the practice of including transaction costs such as fees, commissions, and taxes in loans. Buyers pay these costs, which can be sizeable in Germany. Drawing on experience in other jurisdictions, the FSAP also recommends that the German Financial Stability Committee (FSC) develop and coordinate a communication strategy in support of the activation of borrower-based measures, with the goal of aiding their calibration and improving their acceptability amongst stakeholders.

7. The FSAP identified scope for improvements to the Financial Stability Committee's macroprudential strategy and communications. The FSAP advocates for measures to improve the predictability of decision making, and to promote transparency and accountability. The FSC has greatly improved its communications in recent times. It should now move to publish regular post-meeting records. The Committee has also worked to keep its macroprudential strategy current. The FSAP recommends that the next strategy review articulate the links between macroprudential risks and the corresponding mitigation measures and embed them within its over-arching strategy.

Table 1. Germany: Recommendations on Macroprudential Framework and Tools

Recommendations	Timing*	Agency
Enhance the legislated powers over yet-to-be activated borrower-based instruments to facilitate their effective use, and rapidly introduce powers to set debt-to-income and debt service limits.	NT	BMF
Strengthen current guidance on the standards expected for lending in residential real estate markets.	I	BaFin
The FSC should initiate the development of a comprehensive approach to communication in support of the activation of borrower-based measures.	I	FSC
The FSC macroprudential strategy should embed links between macroprudential risks and corresponding mitigation measures within its overall approach to setting policy.	MT	FSC
The FSC should undertake to publish post-meeting records.	NT	FSC

* I = Immediate (within one year); NT = Near Term (within 1 to 3 years); MT=Medium Term (within 3 to 5 years).

INTRODUCTION

Background and Scope

8. The assessment of Germany's macroprudential framework and tools is a key element of FSAP oversight. The preceding FSAP mission took place in 2015, shortly after the formation of Germany's Financial Stability Committee (FSC), its macroprudential authority, and the introduction of a European architecture for macroprudential supervision in the form of the European Systemic Risk Board (2010), the Capital Requirements Regulation and Capital Requirements Directive (2013), and the Single Supervisory Mechanism (2014).[2] This FSAP has reviewed the performance of Germany's macroprudential framework and strategy in light of the close to a decade's worth of experience with its operation. Much has happened over this period. The authorities have bolstered the macroprudential toolkit with additional tools and made progress towards closing data gaps. A full macroprudential policy cycle has also been observed, with activation, release, and reactivation of the countercyclical capital buffer and other tools. A summary assessment of progress made towards implementing the recommendations of the 2016 FSAP appears in the 2022 Germany FSAP *Financial Sector Stability Assessment* (FSSA) document.

9. The assessment does not cover all macroprudential policy areas. The scope of this document includes the institutional framework (Part II.A, B, and C), and macroprudential strategy and communications (Part II.D); assessment of vulnerabilities that are broad-based (Part III.A), and those that relate specifically to residential and commercial real estate (Part III.B), non-financial corporations (Part III.C), and systemically important institutions (Part III.D). Under each area the assessment discusses the relevant tools. Part II and Part III conclude with recommendations, which are summarized in **Table 1**. An abbreviated version of the macroprudential assessments and recommendations also appears in the accompanying FSSA. This report does not cover the monitoring of non-bank financial institutions and corresponding macroprudential tools. Aspects of this topic were treated in the recent FSB peer review (FSB, 2020). Macroprudential risks for insurance companies are dealt with in a separate FSAP workstream. The macroprudential dimensions of climate risk are not yet sufficiently developed to be treated here (although the issue is touched upon in the insurance workstream). Finally, the assessment omits a discussion of euro area-related policy and focuses instead on matters specific to Germany.

Conjunctural Context

10. The German financial system weathered the COVID-19 pandemic well. At the onset of the COVID-19 pandemic, the authorities responded promptly by easing the stance of macroprudential policy. A planned build-up of the countercyclical capital buffer (CCyB) was reversed, and European-level policies aimed at limiting distributions and encouraging the use of capital and

[2] Throughout the text, 'FSC' references the German Financial Stability Committee (in German, AFS) and not the Eurosystem committee of the same name, unless explicitly mentioned.

liquidity buffers were applied to institutions under domestic supervision (Annex I, Table 1).[3] Policy relaxation was geared towards helping financial institutions to maintain the provision of credit in a situation of actual or potential stress, as foreseen in the Fund's framework for macroprudential policy (Nier & Olafsson, 2020). Financial sector policy was complemented by a strong package of fiscal support measures, including loan guarantees and debt service moratoria, that helped to contain corporate insolvencies and avoid household balance sheet stress (IMF, 2020). The latest data shows Germany's banking system to have capital buffers well above regulatory minimums (with an average Tier 1 ratio of 16.8 percent) and continued low levels of non-performing loans.

11. Macroprudential policy is being tightened. By the end of 2021, the vulnerabilities that had been building prior to the pandemic were judged to have reasserted themselves, and the policy stance was accordingly shifted towards tightening (Deutsche Bundesbank, 2021; Financial Stability Committee, 2021). Similar to 2019, when the CCyB was last raised, the focus of concern is on build-ups of vulnerability in the residential real estate sector, interest rate risk, and evidence of compressed spreads in corporate debt markets. In addition, some tilting in the composition of bank exposures towards riskier corporate borrowers has been seen (see Part III.C). In the background, the persistent low real interest rate environment remains conducive to a build-up of leverage on the part of some households, and to risk-taking in parts of the financial system. Meanwhile low rates along with other structural factors mean banks continue to report comparatively low rates of profitability, which in turn would limit their ability to generate capital organically in the event of a macroeconomic stress (see Germany FSAP 2022 *Financial System Stability Assessment*).

12. Recent policy actions geared towards enhancing banks' resilience were well timed. In the present risk environment, there is a clear need for banks to maintain robust buffers. In addition to the cyclical risks identified above, there are ongoing uncertainties related to the COVID-19 pandemic, and to geopolitical tensions following Russia's invasion of Ukraine. In this context the timely deployment of the CCyB and a residential real estate-focused sectoral systemic risk buffer (SSyRB), geared towards ensuring that outcome, are welcome. (The measures will apply in full, starting February 2023.) The CCyB has been set to levels broadly consistent with the authorities' buffer guide, while the SSyRB has been calibrated to potential losses on residential real estate exposures in a stress scenario. Together, these measures preserved some €22bn worth of bank capital out of the approximately €30bn capital accumulated in buffers over the course of the pandemic. However, on the household side the legislated borrower-based instruments have not been activated.

[3] In addition to the cancellation of the German buffer, German banks benefitted from the release of buffers in other jurisdictions through the standard reciprocity mechanism. Between end-2019 and 2021-Q3, reciprocal reductions released capital worth 0.09 percent of RWAs.

INSTITUTIONAL FRAMEWORK

The Importance of the Macroprudential Framework

13. An effective macroprudential policy needs sound institutional underpinnings. To meet its objectives, macroprudential policy has to overcome biases that may exist towards inaction, or insufficiently timely action. Macroprudential policy is prone to such biases because the costs of policy action tend to fall before their benefits are realized; because costs are more easily observable than are benefits (for example, the benefit of the non-occurrence of a systemic crisis); and because costs are often concentrated on particular interest groups in the financial industry. As well as fostering the *willingness to act*, institutional arrangements should ensure the *ability to act* by providing macroprudential policymakers with appropriate powers. Finally, because of the close relationship between micro- and macroprudential supervision, and the interactions between fiscal, monetary, and macroprudential policies, institutional arrangements need to provide for coordination between different authorities. Whatever macroprudential framework has been put in place, it should be responsive to the emergence of new vulnerabilities, and adapt as experience accumulates, to ensure continued effectiveness.

14. National macroprudential frameworks show notable variation even within Europe. The European Union has enacted the Capital Requirements Directive (CRD), Capital Requirements Regulation (CRR), and a swathe of other financial sector legislation relevant to financial stability in member states, and to other states in the European Economic Area (EEA). The European Central Bank (ECB) shares responsibility for macroprudential policy with national authorities that participate in the Single Supervisory Mechanism (SSM) and can exercise certain macroprudential powers. But although macroprudential policy is a shared competency (IMF, 2018b, pp. §§48-50), responsibilities lie first with national authorities. They consequently take the lead role in macroprudential oversight and in devising the institutional frameworks that support it. As a result, a variety of different models are in evidence: some jurisdictions have formed a macroprudential committee within their national central bank; in others, it is the responsibility of the supervisory authority or the ministry of finance; and in some cases responsibility is shared between institutions. The ESRB has rated the various institutional set-ups established by its members against a set of recommendations of its own (ESRB, 2014).[4]

Institutional Players

15. Four principal bodies have some macroprudential responsibility in Germany:

- **Financial Stability Committee (FSC)** the national macroprudential authority (NMA) of Germany, with responsibility for coordinating the combined activities of the other bodies.[5]

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[4] We reference the results of the assessment for Germany below.

[5] See ESRB/2011/3. The national macroprudential authority is tasked with "identifying, monitoring and assessing risks to financial stability and of implementing policies to achieve its objective by preventing and mitigating those risks".

(continued)

- **Federal Ministry of Finance (BMF)** responsible for financial market policies, interactions with international bodies including the Financial Stability Board, and running the FSC Secretariat. The State Secretary serves as chair of the FSC.

- **Federal Financial Supervisory Authority (BaFin)** the national designated authority (NDA) and a competent authority (NCA) in the meaning of the CRR/CRD, and a member of the ESRB.[6]

- **Deutsche Bundesbank** the central bank of Germany and a member of the ESRB. The Bundesbank has legal responsibility to contribute to the maintenance of financial stability under the FinStabG.

The tasks and powers of each body are described in greater detail in the following sections.

A. Willingness to Act

16. The institutional arrangements that underpin macroprudential policy in Germany are closely aligned with Fund guidance. The first and essential element of institutional guidance is that a body be assigned a macroprudential mandate. In Germany, that body is the FSC, established by the 2012 Financial Stability Act (FinStabG). The FSC is a collegiate, high-level body comprised of three voting members from the BMF, three voting members from the Deutsche Bundesbank, and three voting members and one observer from the BaFin. It came into operation in 2013. Second, the body should have clearly defined tasks. In Germany, the tasks of the FSC are set out in the FinStabG, and by the FSC itself in its strategy document. Its primary purpose is "to strengthen cooperation in the area of financial stability" through, among other things, regular discussion and deciding on formal warnings and recommendations (see Part II.B and Part II.C). Notably, the FSC has no "secondary" objectives. Last, guidance calls for a central role to be assigned to the central bank. In Germany, the Bundesbank is singled out by the FinStabG to undertake particular macroprudential functions, and its views carry special status at the FSC.

17. The legal mandates of the Bundesbank and the BaFin both include financial stability objectives. Under the FinStabG, the Bundesbank is responsible for four essential FSC functions: (i) to furnish the Committee with analysis of the financial stability situation; (ii) to prepare an annual report on the activities of the Committee; (iii) to propose actions to be taken by the Committee (FinStabG, §1(1) point 3); and (iv) to assess implementation of measures taken by the Committee.[7] The BaFin is also assigned specifically macroprudential tasks in law: to counteract financial sector developments that may impair the provision of financial services or lead to macroeconomic

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As such, the tasks of the NMA are broader than those of the competent and designated authorities under CRD IV. All EEA Member States, with the current exception of Italy, have a macroprudential authority.

[6] See Directive 2013/36/EU (CRD IV), Articles 4 and 136 for an explanation of competent and designated authorities. As Germany participates in the SSM, the ECB is also a competent authority for significant institutions. The ECB is also a designated authority for macroprudential purposes.

[7] The Bundesbank's own assessment of FSC recommendations and their implementation may also appear in the *Financial Stability Review* (Deutsche Bundesbank, 2017, pp. 54-56), while the FSC's assessment may appear in their annual report to the Bundestag (FSC, 2018, pp. 34-38; in German).

disruption (Banking Act (KWG), §4(2));[8] to cooperate with the European Systemic Risk Board (FinDAG §4(2) point 1); and to act as a member of the FSC (FinStabG §2(3) point 3).

18. The Bundesbank has a powerful position within the FSC. Although Bundesbank representatives are in a minority, the central bank is able to exert considerable influence on the Committee's proceedings. Of particular note is that the Bundesbank alone may propose draft resolutions for policy measures—recommendations and warnings (see Part II.E)—to be taken by the FSC. Representatives of the Bundesbank may if they see fit exercise a veto on resolutions relating to warnings, recommendations, and their publication. For example, this provision means that Bundesbank representatives could forestall a resolution that had been modified by other Committee members. However, its powers at FSC are balanced by those of other members: the finance ministry retains substantial influence as the State Secretary chairs the FSC and because its secretariat is housed in the BMF; and the BaFin may act on macroprudential policy independent from the FSC in its role as the National Designated Authority (see Part II.B).

19. The FSC Chair seeks broad agreement from members. The willingness to act on macroprudential risks can be affected by the governance of the decision-making committee (IMF, 2013, p. §87). As mentioned above, resolutions for warnings or recommendations are prepared by the Bundesbank. However, any Committee member may propose a topic be discussed (FinStabG, §2(2) point 1). As a general rule, FSC resolutions may be adopted with the assent of a simple majority of voting members. However, the law states that the Chair should seek unanimity, if possible, when use of recommendations or warnings is at issue (FinStabG, §2(5)).[9] The FSC's voting arrangements therefore strike an appropriate balance between the need to avoid delay and the need to ensure different views are considered.

B. Ability to Act

20. Hard powers related to the setting of macroprudential tools rest with the Financial Supervisory Authority. BaFin is the National Competent and Designated Authority (NCA/NDA) for tools specified by European legislation (CRD/CRR), which include those related to capital such as the countercyclical capital buffer (CCyB), the global/other systemically-important institutions (G/O-SII) buffer, risk weight and loss given default parameters (CRR Art. 124 and Art. 164 resp.); those related to liquidity, such as the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR); and the 'national flexibility measures' that allows for stricter macroprudential limits to be applied in certain circumstances (CRR Art. 458). Finally, BaFin may activate macroprudential limits relating to lending for residential real estate that exist in German rather than European law (KWG, Amended June 6, 2017). However, the Bundesbank has responsibilities to advise on the calibration of these borrower-

[8] The text states conditions that are materially the same as the common definition of systemic risk, which macroprudential policy aims to mitigate: "BaFin shall counteract undesirable developments in the lending and financial services sector which may ... impair the proper conduct of banking business or provision of financial services or entail major disadvantages for the economy as a whole".

[9] The relevant Article states: "Decisions regarding warnings and recommendations and the publication thereof […] *should* be taken unanimously" (emphasis added). The word 'should' is intended to indicate unanimity is an objective to which the Chair works, rather than an instruction.

based measures under a statutory order (WoImmoDarlRV), meaning that in effect BaFin cannot set the instrument to a chosen level without the Bundesbank's consent.[10]

21. The FSC has the power to make recommendations with a comply-or-explain mechanism. Most jurisdictions that have established a macroprudential committee separate from their central bank or the financial supervisory authority (a 'stand-alone' committee) have granted it such powers.[11] In Germany, the FSC may address formal *recommendations* to public bodies in Germany, including (but not limited) to the Federal Government and to BaFin (FinStabG, §3), when it identifies potential or actual threats to financial stability. The recipient of a recommendation is required to respond either by acting to implement its contents or, if to any extent it does not act, by explaining why (a so-called 'comply-or-explain' mechanism, considered in Fund guidance to be a 'semi-hard' power). To date, the FSC has issued two public recommendations: one (to the Federal Government) relating to borrower-based measures for real estate loans; and another (to BaFin) relating to the activation of the CCyB.[12] The Committee also has broad scope to communicate through its statements, annual report, and formal 'warnings'. These 'soft' powers are discussed further in Part II.E.

C. Effective Coordination

22. Cooperation between the domestic bodies involved in macroprudential policy is promoted by the FSC. The FSC is principally a forum for senior level discussion and decision making. Beneath the FSC, a sub-structure of formal and informal cooperation functions to support collaborative monitoring efforts, and to leverage the expertise that exists across the BMF, the Bundesbank, and the BaFin. Working-level cooperation in support of the FSC is reported to be frequent and effective. Legal and practical arrangements exist to ensure each agency is privy to the data and analysis that may be required to undertake their assigned tasks. The FSC secretariat is housed in the BMF's Financial Market Stability Division (VIIC1) and takes a lead role in coordinating inputs from the BaFin and the Bundesbank to the committee's quarterly meetings. The FSC secretariat also facilitates coordination within the BMF, involving other units as necessary to prepare BMF members for FSC meetings, or when actions by the FSC or other bodies make it necessary for legal instruments (laws and ordinances) to be introduced.

23. Financial stability work within the Bundesbank and the BaFin is well embedded in 'business as usual' processes. The Bundesbank underwent a reorganization in the early 2010s to enable it to undertake the broad range of financial stability tasks assigned to it under the FinStabG. This included the creation of a new directorate-general for financial stability (DG-FS) in 2012. The Coordination Committee for Financial Stability (KAF), which is chaired by the head of DG-FS, brings

[10] For an overview of Germany's current suite of macroprudential tools, please refer to the IMF Macroprudential Survey, available at: https://www.elibrary-areaer.imf.org/Macroprudential/Pages/Home.aspx.

[11] Exceptions include Chile and Mexico, see the IMF Macroprudential Survey. The French High Committee for Financial Stability (HCSF) possesses in addition a range of 'hard' macroprudential powers, which other similarly constituted committees do not.

[12] Macroprudential measures are discussed in Part III.

together the perspectives of other directorates-general within the bank. The KAF and its substructures prepare materials for discussion at FSC meetings. These materials are approved by the Executive Board prior to FSC meetings, ensuring that Bundesbank members take positions at the FSC that are consistent with the majority view of the bank. The BaFin has fewer resources dedicated to macroprudential policy matters, compared to the Bundesbank. Two divisions within the Directorate for International Policy, Financial Stability, and Regulation deal with (respectively) domestic policy (including, for example, setting of the SyRB) and international policy (including, for example, cooperation with the ESRB). Within the BaFin, the Strategic Risk Committee brings together micro- and macroprudential policy areas, playing a similar role to the KAF. In summary, both institutions have put frameworks in place that bring macroprudential perspectives into staff-level discussions and to decision-makers.

D. Macroprudential Communication and Strategy

24. Good communication is crucial at every stage of the macroprudential policy process. Mitigating systemic risk through macroprudential measures brings social benefits while restricting or raising the private costs of certain activities. The private costs of macroprudential measures, especially but not only those that are targeted to particular risks, will fall predominantly on the financial industry, or on specific groups of households and corporations (IMF, 2013). Even a well-designed policy, that minimizes undesirable costs and provides net benefits to society, may nevertheless face resistance from these stakeholders. If measures are to gain acceptance, a considerable premium must therefore be placed on effective engagement at every stage of the policy process—risk assessment, instrument design and/or calibration, legal, supervisory/compliance reporting, and roll-out.[13] This imperative has special force for less-established policy committees, for novel policy measures, and where measures impact politically-sensitive constituencies. For stand-alone committees such as the FSC, communication importantly serves to build awareness of the body's purpose and its powers. Stand-alone committees remain a recent innovation, and even informed members of the public are not necessarily aware of such basic facts.[14]

25. Soft powers complement binding macroprudential actions. Most stand-alone macroprudential policy committees have at their disposal 'soft' powers, by which we specifically mean a formal mode of communication, specified in legislation, separate from committee statements and the like, that we will refer to as 'warnings' (although a number of other terms are used, (Annex I, Table 2). Unlike recommendations, warnings usually imply no obligations on the addressee, which is why they are considered a 'soft' power (IMF, 2014a, §87). Nevertheless, a national stand-alone committee may find it helpful to be able to issue its own formal financial stability warnings, separate from those of other bodies involved in financial stability work—although

[13] A measure that fails to gain acceptance from key stakeholders may face legal challenge, lead to intensified efforts at circumvention on the part of those affected, and ultimately to reputational damage to the macroprudential authority that impairs its ability to act.

[14] Our interviews with experts on Germany (including industry members, press, and academics) did not contradict this assertion, and neither did the results of our research on Factiva, looking for articles that mentioned the FSC in English and in German.

used in isolation they would likely be insufficient (IMF, 2013, p. §76).[15] For example, whereas national central banks commonly prepare a financial stability report, the macroprudential committee may wish to emphasize particular risks or indicate its intentions to act in ways that go beyond the limits of the central bank's power.[16]

26. Central banks communicate frequently on financial stability matters, whereas prudential regulators are less commonly involved in systemic risk oversight. Over the period following the 2007-9 global financial crisis, many central banks have progressively enhanced their communication on financial stability matters. In part, this reflects the new responsibilities given to banks in this domain, and the concomitant need for improved accountability. It is now commonplace for the central bank to prepare a financial stability report (FSR) providing detailed analysis, risk assessments, and in some cases direct discussion of policy matters. When supported by a communication strategy that exploits multiple channels, a press conference, speeches by senior policymakers, and other outreach, FSRs can enhance public understanding of financial sector risks.[17] The Bundesbank produces an excellent FSR that includes extensive discussion of risks and policy options once a year. However, the FSR and the Bundesbank's other communication is mostly targeted to a narrow technical audience.[18] Where regulators have responsibility for the setting of macroprudential instruments, as is the case for the BaFin, their communication necessarily tends to be more technical, and targeted more tightly on industry.

27. Policymakers need to be selective in drawing lessons for macroprudential policy communication from the monetary policy realm. The type of information in financial stability records necessarily differs from that in the minutes emanating from monetary policy committee meetings. Foremost, financial stability policy is primarily concerned with actions that affect the likelihood or impact of tail events. It explicitly considers scenarios, often formalized in stress tests, as a guide for policy.[19] Monetary policy, on the other hand, is chiefly concerned with what is most likely—modal outcomes. This is not to say that monetary policymakers are unconcerned by the *realization* of shocks with uncertain effects. Monetary policy statements frequently mention

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[15] Stand-alone committees have used formal warnings only sparingly. An example of a national authority using warnings is the Danish Systemic Risk Council. It issued an 'observation' on the risks attending the low interest rate environment (see Systemic Risk Council 2014, 2015).

[16] In jurisdictions where the macroprudential authority is the central bank or a committee within the central bank, the financial stability report may serve as a vehicle for that authority's communications (for example, the Bank of England's *Financial Stability Report* is owned by its Financial Policy Committee).

[17] The ESRB *Macroprudential Handbook* sets out some of the principal considerations required for effective communication across multiple target audiences (ESRB, 2018, p. Ch. 10). The Bank of England's communication strategy has sought to broaden the audience for financial stability messages through "layered" communications, where successive layers offer increasing detail and depth (Haldane & McMahon, 2018). The topmost layer is a social-media friendly info graphic. The ECB has similarly introduced an infographic summary of its financial stability report.

[18] The Bundesbank has released some short video clips on financial stability matters as part of its general public education and outreach, but it and the FSC have mostly relied on the news media to convey its policy messages to the public.

[19] Examples include the systemic risk buffer set in Norway, and the countercyclical buffer in the United Kingdom (Kohn, 2019).

uncertainty as a factor in the policy decision.[20] But the type of scenario analysis that informs macroprudential policy, and hard-to-quantify contingencies, rarely figure.[21] Second, the focus of the monetary policy decision is clearly on the near-term path of interest rates—at least outside of crisis periods.[22] Policymakers signal their intentions using often subtle variations in language ('central bank speak') that the markets watch closely. The macroprudential policy decision, on the other hand, concerns a broad set of tools affecting a shifting array of vulnerabilities. It therefore seems unlikely that regular communication from a financial stability committee would fall into the patterns followed by monetary policy committees.

Communication Tools

28. The Financial Stability Committee has the power to 'warn' on financial stability risks. In Germany, FinStabG (§3(1)) indicates that the FSC may address warnings "to a specific addressee [public body] to indicate dangers that could affect financial stability". The FSC's strategy elaborates that warnings are to be used when "the Committee wishes to make addressees aware of a looming threat to financial stability and if the information content of the warning can help safeguard financial stability". The warning is "intended to encourage addressees to take the identified risks and dangers into account in their decisions". The tests that must be met prior to a warning are that: (a) a vulnerability has been identified; (b) a public body could consider (or avoid) some action and thereby mitigate it; (c) the warning would encourage them to do so. The FSC has not used this power to date.

29. Recent post-FSC meeting statements showcase a revised communication strategy. In addition to formal communications devices, such as warnings, the FSC is also at liberty to issue *ad hoc* communications, such as press releases and post-meeting statements. These are disseminated via the recently launched FSC website (https://www.afs-bund.de/afs/EN/Home/home.html). In its 2020 strategy, the FSC recognizes the important functions that such communications can play in the event that systemic vulnerabilities are building. Recent statements illustrate how the key elements of the revised strategy are working in practice. The December 2021, FSC statement provided information about the Committee's risk assessment, and raised awareness of financial stability issues that might develop, which helps to build support for action; it also set out a clear policy direction,

[20] Evans and others (2015) argue that a 'risk management' approach should influence the stance of monetary policy when the dispersion of shocks is high, especially near the effective lower bound for nominal interest rates. They also give evidence that it has done so in the United States.

[21] For example, in 2011 problems with indebtedness in parts of the euro area posed significant downside risks for the UK economy. The Bank of England's monetary policy committee saw "no meaningful way to quantify the most extreme outcomes", and explicitly *excluded* them from their forecasts (*Inflation Report*, November 2011). However, during the COVID-19 pandemic, some central banks did explicitly consider alternative scenarios as a substitute for a forecast.

[22] The central bank can control the short-term interest rate with precision through its market operations and standing facilities. For that reason it is the tool of choice when the central bank wishes to alter the stance of policy, unless it is constrained by technical factors (notably the "effective lower bound"). We understand that monetary policy committees today stand ready to use a variety of policies in crisis situations, still usually termed "unconventional" despite their use in multiple jurisdictions over decade-long periods. Our claim is only that, in almost all non-crisis situations, the principal subject of monetary policy communication is the path for the short-term interest rate.

which may help to guide expectations and to encourage stabilizing behaviors on the part of the private sector. The statements that followed in January 2022, were well coordinated with BaFin announcements concerning their new policy measures, delivering a consistent message.[23] This type of coordinated communication usefully reinforces official messages, raises the profile of the FSC, and is in line with advice from European authorities (ESRB, 2018).

Macroprudential Strategy

30. Strategy documents are an important element of overall macroprudential communication. The tasks of a strategy document are to 'elaborate the objectives of macroprudential policy, explain the decision-making process leading up to macroprudential action, and set out the expected transmission of macroprudential tools' (IMF, 2014a, §51). Fund guidance identifies at least three benefits of developing a macroprudential strategy: to foster public awareness of macroprudential objectives and the expected benefits from deploying macroprudential tools; to counter inaction bias and improve accountability; and to guide expectations, particularly when policy is relaxed. Most EU countries and some non-EU countries (e.g., Georgia, New Zealand, United Kingdom) have put a macroprudential strategy in place.[24]

31. The Financial Stability Committee has developed and published a macroprudential strategy. The strategy was most recently updated in 2020. It sets out the FSC's overall objectives for macroprudential policy, the Committee's approach to risk assessment, its objectives for and approaches to communications, and the use of its powers of recommendation and warning. Because Germany has a stand-alone committee with hard powers assigned to BaFin, when it comes to setting down how instruments are to be used, the FSC strategy focuses on the tools at its disposal: chiefly the power to recommend actions to other public bodies, and its soft powers relating to warnings and other communications.

Transparency and Accountability

32. Records of macroprudential policy discussions are often published in OECD jurisdictions. Practices differ widely, however. For example, records are published soon after a policy meeting in the Czech Republic, Belgium, Denmark, Finland, France, and Ireland, amongst others. The level of detail provided in these records varies. In some cases, there is a short summary of meeting discussion points (e.g., France, Poland); in others, a lengthier discussion of risks and policy directions is given (e.g., United Kingdom); minutes are published in only one instance (United

[23] For the FSC's post-meeting statement of December 3, 2021, see https://www.afs-bund.de/afs/Content/EN/Articles/Activities-of-the-FSC/Macroprudential-instruments/2021-12-03-fsc-return-to-prevention-mode-in-macroprudential-policy.html. For BaFin's announcement of January 12, 2022, see https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Pressemitteilung/2022/pm_2022_01_12_antizyklischer_Kapitalpuffer.html (in German). For the FSC's response, see https://www.afs-bund.de/afs/EN/Activities-of-the-FSC/Macropudential-instruments/macroprudential-instruments.html.

[24] The Reserve Bank of New Zealand's framework document seeks to 'improve the quality, transparency, and predictability of … decision making [and] provide a basis for holding the Reserve Bank to account for macroprudential policy decisions, and ultimately [to build] legitimacy for the use of macroprudential instruments' (Ovenden, 2019).

States). Extant practices reflect a variety of factors, including the transparency standards already set for a particular decision-making body; for example, where central banks act as a macroprudential authority, prior standards are typically set for monetary policy (e.g. Norway, New Zealand);[25] and where a government body acts as a macroprudential authority, publication of meeting records may be routine (e.g. the Swiss Federal Council, or the Financial Stability Oversight Council of the United States Department of Treasury). Thus, both the architecture of the institutional setting, and national norms factor.

33. The Financial Stability Committee operates with a good level of transparency. There are procedural and operational aspects to transparency in policy decisions. The FSC discloses relevant material on both counts. First, it has published its decision-making procedure, as part of its internal Rules of Procedure (ROP). Second, it publishes its macroprudential policy decisions in a timely fashion, typically immediately following its meetings. Third, when a macroprudential recommendation is issued, it is accompanied by a detailed explanation of the financial vulnerabilities or potential macroprudential concerns that have been identified, the suitability of the recommended measure in comparison to other actions, and its likely benefits and costs.[26] Fourth, the Bundesbank and FSC make available, via their websites, certain financial stability indicators and data sets, including those used as inputs to the CCyB guide. Together, these features support FSC decisions by helping them to be understood, acted upon, and appropriately scrutinized (IMF, 2013, p. §79).

34. The Financial Stability Committee is formally accountable to the Bundestag (Federal Parliament). The tool established in law for the purpose of accountability is the FSC Annual Report. The report covers the period from April of the year preceding publication through to the following March, inclusive, and is then released in June or July. The report—which as noted in Part A is prepared by the Bundesbank—summarizes the topics that the Committee has considered over the reporting period. It offers a brief account of risks and vulnerabilities, and the Committee's views on them. The report therefore gives insights into the Committee's priorities, its views on the settings of macroprudential instruments, and foreshadows actions that they may consider taking. For example, the 2021 report indicated that the FSC would consider more flexible use of the CCyB than had previously been the case, and the possibility of a 'positive neutral' buffer level (see Section II). In these ways the FSC annual report supports the body's accountability to Parliament. Accountability for BaFin actions, such as changes in macroprudential instrument settings, is to the BMF.[27] (The Bundesbank stands largely outside the system of political oversight and scrutiny.)

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[25] Meeting transcripts are sometimes kept and subsequently released by monetary policy committees, albeit with a very considerable lag. This practice is controversial, however, and the existence of transcripts is said by some to impair the quality of committee debate.

[26] For example, see Recommendation AFS/2015/1, "Recommendation on new tools for the regulation of lending operations for the construction or acquisition of residential properties". Financial Stability Committee, June 30, 2015 (in German).

[27] BaFin provides regular reporting to the BMF on the material decisions it takes; for further information, see Germany FSAP 2022 Technical Note on Regulation and Supervision of Less Significant Institutions.

E. Assessment and Recommendations

Overall Assessment

35. The German macroprudential framework is well developed and mostly effective. Germany's macroprudential policy framework was relatively new at the time of the last FSAP. The intervening period has seen notable developments in the framework, including refinements to the FSC's strategy, the use of FSC recommendations, and an increased emphasis on communication. The formal and informal coordination between the constituent bodies of the FSC is reported to be excellent, and greatly aided by the FSC's capable secretariat. The framework supports a willingness to act by assigning clear macroprudential tasks to the FSC, Bundesbank, and BaFin; and by having well-designed decision-making procedures. The ability to act is supported by appropriate legal provisions, both for the FSC to make comply-or-explain recommendations, and for BaFin to enact binding macroprudential measures. Over time, the FSC has increased its openness considerably, and Committee decisions are very well documented and supported. However, information on the Committee's ongoing activities becomes available only with a considerable delay, and with relatively little flavor of the policy debate.

36. The Financial Stability Committee's power to issue warnings has limited use cases. The conditions that have been set out for the FSC's use of warnings appear to describe a rather narrow set of circumstances, particularly in respect of potential addressees. Committees in some other jurisdictions have powers to address formal warnings to a broader set of stakeholders. For example, Poland's Financial Stability Committee may address warnings to actors in the financial system, as well as to the member institutions of the FSC; and in the UK, the Financial Policy Committee may make 'soft' recommendations to private sector bodies, such as the British Bankers' Association. The circumscribed set of bodies to which the German FSC may address warnings may help to explain why warnings have yet to be used. Nevertheless, the Committee might give greater consideration to its use of warnings in future. A possible use case is offered as an example in Part III.B.

37. The German macroprudential strategy has gaps. The foregoing text has set out the important roles that a well-articulated macroprudential strategy document should play and noted the FSC's published strategy document. Extant guidance from supranational bodies does not specify where the responsibility for setting out strategies for legally-binding macroprudential instruments lies in a collegiate system such as Germany's (IMF, 2014a). However, it is clear that an essential element of any national strategy should be to explain how instruments are expected to be set to meet overall macroprudential policy objectives (ESRB, 2017). For the CCyB, Bundesbank and BaFin authors have published a guide that sets out the instrument's design and purpose, basic and extended indicator sets to be used in calibration, and conditions for its release (Tente, Stein, Silbermann, & Deckers, 2015). Moreover, a large subset of the data underlying quarterly CCyB decisions is made available, including on the FSC's website. Similarly, the methodology for the O-SII buffer is published and regularly updated (BaFin and Bundesbank, 2021). Unfortunately, much less information has been shared in respect of the other macroprudential tools at the authorities' disposal.

Recommendations

38. The FSC macroprudential strategy should embed links between macroprudential risks and corresponding mitigation measures within its overall approach to setting policy. The present strategy emphasizes the processes to be followed in the event that instruments are used or adjusted, and the responsibilities that fall on the competent authorities. But it does not articulate the link from the high-level principles the strategy sets out to the operational level.

- The FSAP advocates specifically that the FSC adopt an approach to the joint use of macroprudential instruments that will guide its recommendations, warnings, and other communications.
- It is preferable that thinking on approaches to operationalizing policy emanate from the FSC, rather than carry the brand of one or other member institution.
- The FSC's macroprudential strategy is periodically revised (most recently, in 2020). The introduction of new tools might occasion an update of the strategy.
- In implementing this recommendation, an appropriate balance must be struck between the provision of information that can guide market participants on one hand, and the need to react flexibly should new circumstances dictate.
- This recommendation is specifically not calling for a quantitative buffer guide, along the lines of that developed for the CCyB and O-SII buffers, be developed for every instrument.

39. The FSC should undertake to publish post-meeting records, providing more timely and relevant information on their activities, to thereby promote the transparency and predictability of decision-making. While recognizing that changes need to be carefully thought through, the FSAP sees merits in now starting to provide timely records of the FSC's meetings, similar to practice in other OECD jurisdictions (Annex I, Table 3).

- The FSC's annual report contains a useful summary of its activities over each reporting period. Information is given on the topics the Committee has addressed in its discussions, developments that have affected financial stability, and the positions the Committee took on policy questions. However, the report is published with a delay with the drawback that much of the report's contents may already be known, or may be of limited continuing relevance.
- Appropriate disclosures of policy discussions made soon after meetings have concluded would foster better understanding of how the Committee wishes to react to evolving risks and vulnerabilities—even when no action is taken. Further, it could serve to improve transparency (IMF, 2013, p. §79).
- Any published meeting record would naturally respect confidentiality and sensitivity concerns, as elsewhere. For example: comments need not be attributed to individual representatives; and subjects of discussion need not be revealed if that would in itself pose a sensitivity concern.[28]

[28] The frequency or timing of meetings should not constitute sensitive information.

- The record could be based on the meeting minutes (ROP §9), but would largely reflect the consensus views of the Committee, mirroring its internal decision-making. There could be benefits to providing a flavor of the Committee's discussions too.
- Detailed or attributed records in the style of a meeting transcript are sometimes released, with a long delay, by monetary policy committees. However, the benefits and costs of releasing such materials remain the subject of debate.

In conjunction with our recommendation on developing an instrument strategy, the FSAP anticipates that records of policy discussions will contribute the FSC's goal of shaping a successful macroprudential policy acting "to a large extent through … expectations" (FSC, 2020).

SYSTEMIC RISKS AND MACROPRUDENTIAL TOOLS

A. Broad-Based Vulnerabilities

The Countercyclical Capital Buffer

40. Germany follows the principle of 'guided discretion' to set the countercyclical buffer. The CCyB is the foremost macroprudential tool for mitigating broad-based cyclical vulnerabilities. In Germany, national discretion in the use of the buffer is accompanied by a 'rules-based' component. German laws and regulations specify that the rules-based component be computed each quarter, and that it be based on the deviation of the domestic credit-to-GDP ratio from its long-run trend (the 'credit gap').[29] The buffer guide must also take account of technical recommendations on the computation of the credit gap and the buffer guide values from the ESRB. At the same time, wide latitude is granted for the 'discretionary' component. European legislation permits the BaFin to take into account 'other variables [in addition to the credit-to-GDP ratio] relevant for addressing cyclical systemic risk'.[30] Finally, when setting the buffer, BaFin must also take into account formal recommendations of the German FSC and recommendations of the ESRB, such as that issued to Germany in December, 2021.[31]

41. The German authorities have cleaved closely to the 'rule' component, with some use of discretion. Discretionary action has been the rule not the exception for setting the CCyB in most jurisdictions where it has been activated (Arbatli Saxegaard & Muneer, 2020). Of the 15 jurisdictions in which an announcement to activate the CCyB was issued between 2014 and 2021, the majority did so when the credit-to-GDP gap was *negative*. (Below-trend credit signals a relaxation of the buffer, not an accumulation, in the Basel framework.) It can further be observed that some

[29] See SolvV, §33 et seq. and KWG, §10(d). The German buffer guide based on the 'national method' is a slight modification of the Basel formulation designed to prevent a higher guide rate in the event of a decline in GDP; in addition, the credit aggregate used to compute the gap measure is more narrowly defined, being the loans to and debt securities of the private non-financial sector held by domestic banks and money market funds (Tente, Stein, Silbermann, & Deckers, 2015, Box 3).

[30] See CRD IV, Art. 136, para. 3(c). Note that interpretation of German regulation, including the parts of SolvV and KWG relevant to the CCyB, must be made in the context of European legislation.

[31] See Recommendation ESRB/2021/10.

jurisdictions activated the buffer when the credit-to-GDP gap was in deeply negative territory. Examples include Bulgaria and Ireland. Those actions can be seen as a recognition of the problems that beset the gap measure in the aftermath of a shock such as those experienced in 2008-11.[32] In Germany, an increase in the buffer to 0.25 percent was announced in 2019 when the guide stood around 0 percent; when the buffer was set at zero during the pandemic, the guide stood at 1 percent; and when an increase to 0.75 percent was announced in January, 2022, the guide stood closer to 1.25 percent. So, while discretion has been routinely employed, the size of the deviation from the rule-based component has been small. This reflects, in part, the authorities' assessment that broad-based vulnerabilities were low in the mid-2010s; but also their generally cautious and literal interpretation of elements of the buffer framework.

42. The authorities have recently completed a review of the way the countercyclical buffer is set. The review reportedly sets out changes in two principal areas.[33] First, it delineates a set of general principles that would unpin future use of the buffer, including on the speed at which the buffer should be built up, and principles for its release. The principles appear to align strategy for the use of the CCyB with the central elements of the FSC's overall macroprudential strategy, especially the emphasis on preemptive action. Second, it streamlined the set of indicators that inform the discretionary component of the buffer, which had numbered around two dozen series, not all of which were publicly available (Tente, Stein, Silbermann, & Deckers, 2015). There were no changes to the rule-based component in the review, although the authorities are newly making use of forecasts for the rules-based indicator in their deliberations.

The Minimum Leverage Ratio

43. The Basel minimum leverage ratio requirement is a backstop to risk-weighted capital requirements. The rationale for the minimum leverage ratio (LR) requirement is that any form of asset risk weighting is potentially subject to error arising from all manner of analytical weaknesses, or deficiencies in the processes of negotiation by which risk weights are agreed in international forums. A prominent lesson drawn from the global financial crisis was that procyclical, optimistically low, and miscalibrated risk weights had led banks to hold far too little loss absorbing capital against their exposures. By considering unweighted exposures, the LR can therefore act as a backstop that guards against such error. In the EU, a minimum LR requirement of 3 percent has applied to all banks since June, 2021. Under CRD V, supervisors can also top up the LR requirement where they see fit. In addition to the minimum, global systemically important institutions (G-SIIs) will have to hold an additional LR buffer amounting to 50 percent of their risk-weighted G-SII buffer rate (see Part III.D) as of January 2023. The introduction of the G-SII LR buffer was postponed as part of the

[32] Following a 'boom' and 'bust' in the credit-to-GDP ratio, the credit gap is biased downward; the German credit gap was negative for a prolonged period following a stress episode (Deutsche Bundesbank, 2021, p. Chart 2.3.2). Also, the computed gap is often found to be extremely sensitive to the length of the time series used. Because of its analytical shortcomings, some have argued that the particular de-trending method employed in the Basel gap indicator should never be used (Hamilton, 2018).

[33] The FSAP team has not seen the review. At the time of writing, the review has not been published or approved by the FSC.

CRR 'quick fix' enacted in response to the pandemic. The LR and LR buffer are calculated on the same basis, as the ratio of regulatory Tier 1 capital to the total exposure value of all assets and off-balance sheet items (CRR, Art. 429).

44. Leverage rules were amended to support the implementation of monetary policy. To provide monetary easing in response to the COVID-19 pandemic, the ECB implemented a program of asset purchases financed by central bank reserves. As a result, the balance of excess reserves in the euro area banking system rose by a factor of 2.4 between December 2019 and January 2022. Because reserves are liabilities of the central bank, they carry zero risk weight. But by expanding unweighted bank balance sheets, reserve expansion makes the leverage ratio more binding than the risk-weighted capital ratio. To counter this effect, the CRR (Art. 429a) allows the CA to permit the exclusion a portion of a bank's exposures to central banks from the LR requirement so long as 'exceptional macroeconomic circumstances' prevail.[34] The CRR 'quick fix' brought forward this discretionary relief measure, which was to have become applicable only with the implementation of CRR II.[35] The ECB allowed institutions under its direct supervision to make use of the temporary relief, and BaFin adopted the same provisions for Less Significant Institutions (LSIs) in Germany. These temporary relief measures were finally removed as of April, 2022.

Assessment on Broad-based Vulnerabilities

45. The authorities have taken steps to learn the lessons of the past policy cycle. As part of a 'lessons learnt' process, the authorities concluded that the CCyB framework required modifications to ensure activation would not come 'too little, too late'. The FSAP shares that assessment. It remains to be seen whether the revised buffer framework, which is yet to be approved by the FSC, will lead to more timely action. But the package of measures enacted in January 2022 (see Part I) offers encouragement. The FSAP welcomes the more nimble approach taken to activating the CCyB in particular.[36] External observers viewed the authorities' approach as cautious. Many share the perception that the authorities were slow to act in the past, and perhaps for that reason were surprised when the buffer was raised by 0.75 percent in January, 2022. Industry participants are prone to viewing the past policy cycle as demonstrative of a failure in the framework, noting that banks did not actually use buffers. They tend not to support the practice of countering the accumulation of vulnerabilities in an up-turn by raising the CCyB.

46. The authorities should continue to use the flexibility afforded by the discretionary component of the CCyB framework. The countercyclical capital buffer is a national tool and the authorities aim to use it flexibly. This flexibility should be used to ensure it is set at a level from which it could be materially reduced if needed. If the circumstances warrant, consideration could be

[34] Under the rules, exposures to the central bank accumulated since the start of the pandemic could benefit from LR relief.

[35] That is, from June 2021. However, the measure was made available earlier, in the CRR 'quick fix' (until the end of June 2021). Subsequently, the relief measure has been based on CRR II. Note that CRR II refers to Regulation (EU) No. 575/2013 as amended by Regulation (EU) 2019/876.

[36] In the prior policy cycle, the CCyB was activated only following a formal FSC recommendation (AFS/2019/1).

given to using the available flexibility to set a positive neutral rate for the CCyB, following practice in the Czech Republic, Lithuania, and the United Kingdom. Setting the buffer to be non-zero in a normal risk environment creates space to act in case of shocks—assuming that other buffer requirements are not reduced—and can be seen as consistent with the FSC's principle of taking gradual, preemptive macroprudential action. Decisions on introducing a 'positive neutral' buffer in Germany may be informed by the nature of future amendments to the CRR to address buffer 'releasability' (i.e. the question of how to allocate capital between releasable and structural buffers) more generally. The issues of buffer releasability, as well as buffer 'useability' (below), have been raised in a targeted consultation on the macroprudential framework run by the European Commission ahead of its upcoming legislative review.[37] The results of these processes will be made known after the present FSAP has concluded.

47. The useability of capital buffers remains a concern. To have the intended effect of supporting the supply of credit in a stress scenario, banks must be willing and able to use the space that the release of the countercyclical buffer provides. In the case of Germany, data on the effectiveness of buffer release is limited because the CCyB had not been fully phased in at the time of its release, and had been set at a comparatively low level.[38] However, valid concerns have been raised over potential constraints on the effectiveness of CCyB release in future stress episodes, not only in Germany but also elsewhere. A key challenge that has been identified is that capital has overlapping regulatory uses, notably to fulfil the LR requirement, and (in Europe) minimum requirement for own funds and eligible liabilities (MREL).[39] The CCyB is therefore not guaranteed to be the binding constraint amongst the multiple constraints that banks face, especially in circumstances of stress (the CRR 'quick fix' to the LR requirement was a recognition of that fact). The outcome of the European legislative review process will, to a large extent, inform the future terms of this debate. It will also be important to maintain a good flow of information between the FSC and the relevant authorities overseeing MREL (the SRB for large banks, and BaFin otherwise) on matters including the headroom banks have over their requirements, actual and potential breaches, and potential restrictions on distributions (M-MDA).

[37] Under the CRR (Art. 513), the Commission must review whether the macroprudential rules in the CRD/CRR are 'sufficient to mitigate systemic risks in sectors, regions and Member States'. The present review period runs to June 30, 2022.

[38] Germany was not alone in this respect. The level of the CCyB in many European jurisdictions was close to the lower end of its range prior to the pandemic, which affected the amount of releasable buffers (ESRB, 2022). Couaillier, Lo Duca, Reghezza, d'Acri, & Scopelliti (2021) find that broader regulatory capital relief measures had positive effects on lending for banks in the euro area, especially for institutions closer to the Combined Buffer Requirement.

[39] An additional factor is related to a tightening of the rules on output floors applied to banks that use IRB methods under the 2017 reforms to Basel III. (Output floors limit the capital-saving benefits an IRB bank can obtain through reductions in RWAs.)

B. Household Sector Vulnerabilities

Residential Real Estate

48. The German residential real estate market is in the midst of a prolonged and broad-based boom. Residential real estate (RRE) prices rose by more than 90 percent in nominal terms (and 60 percent in real terms) between 2010 and 2021 (Figure 1). The rise continued during the pandemic and the accompanying recession: Nationwide, RRE prices grew by 10.3 percent in 2021 (versus 6.5 percent in 2019) and 8.2 percent in the largest seven cities (versus 4.2 percent in 2019). Similar patterns have been observed in other advanced economies, in a break with past cyclical comovements between house prices and economic downturns (Igan, Kohlscheen, & Rungcharoenkitkul, 2022). In Germany as elsewhere, the fundamental forces of supply shortages and strong demand have acted in combination to produce the sustained run-up in prices. Housing supply has been constrained by construction sector labor shortages and capacity constraints, limited land availability in larger cities, and more recently, shortages of construction materials due to supply disruptions. Demand for housing in urban areas has increased as a result of immigration and urbanization, and as household savings were directed into real estate. In markets with inelastic supply, such as Germany's major urban centers, standard logic dictates that prices are likely to be more sensitive to demand shifts than elsewhere, and are therefore also more sensitive to buyers' access to credit, an important determinant of demand.

49. Germany has the second lowest homeownership rate in the OECD, with more than half of households renting their homes.[40] Historically, the high rentership rate has been largely driven by housing policies that have incentivized renting over homeownership, including strong renter protection laws, subsidies focused on renters rather than homeowners, and a large social housing sector with broad eligibility requirements.[41] Nevertheless, the housing cost overburden in German cities and rural areas—defined as the share of population living in a household where total housing costs represent more than 40 percent disposable income—was among the highest in Europe in 2019 (16 percent). For Germany overall, around 26 percent of household disposable income was dedicated to housing costs in that year, also above the EU average of 20 percent.[42]

[40] Only Switzerland has higher rentership rate than Germany among the OECD countries. Renter households are diverse but tend to be less affluent. The median renter household has less wealth (EUR 10.4 thousand) than the typical home-owner household (EUR 277 thousand), even if adjusted for the value of their home. Renter households are also more common for households with heads of foreign nationality, single-person or single-parent households, and are more often in the younger and older age groups.

[41] The majority of the supply of rental properties comes from private landlords. There are currently incentives for mortgaged property owners to let their properties, as mortgage interest is tax deductible when the home is rented out but not otherwise.

[42] For details, see Housing in Europe, statistics visualized, 2020 edition.

50. Standard indicators of property price misalignment point to some degree of overvaluation in residential real estate markets. At end-2021, overall price-to-rent and price-to-income ratios showed a deviation from long-run averages of 37 and 21 percent, respectively.[43] City-level data also suggests price misalignment in the largest 7 cities, where price-to-rent ratios deviated from the long-run (2000-20) average by between 15 and 45 percent. The Bundesbank's latest estimates, based on econometric models that account for a number of valuation factors simultaneously, suggest overvaluation of between 20 and 35 percent for Germany overall, and in the range of 15 to 40 percent in the cities at end-2021. Overvaluation estimates computed by the FSAP team are broadly comparable to the Bundesbank's estimates of RRE overvaluation, which rely on four different measures that include standard indicators of price-to-rent and price-to-income deviation, and an overall and a regional econometric models that rely on the latest available data, including from private data sources (see FSAP Background Note on Real Estate).

51. The lack of a single data source for residential real estate prices complicates efforts to monitor and analyze developments. Incomplete and delayed inputs harm the reliability of some real estate price estimates compiled by the Federal Statistics Office (Destatis). Private data sources including from vdpResearch and bulwiengesa AG supplement the official data. However, different methodologies and coverage often result in noticeable differences between sources.[44] Regional estimates (and for 127 cities) are available at annual frequency. There is no data for municipalities. For calculation of regional real estate price indices, Destatis relies on transaction data from committees of surveyors for property values, which is currently provided in an incomplete form and with a time delay; about 45 percent of the data for the most recent period cannot be used for index calculation due to missing price-determining attributes required for quality adjustment. Such limitations complicate calculations of official real estate price statistics, particularly for rural areas, makes estimates highly susceptible to revisions, and have significantly reduced data usefulness for analytical purposes.

52. Banks hold the largest share of exposures to real estate in Germany. Most loans for house purchase in Germany are granted by banks. A small share (about 5 percent) of outstanding mortgage loans is also held by insurance companies, which occasionally also grant loans to households. Bank loans for house purchase constituted about 45 percent of GDP as of 2021Q4 and continued to grow strongly despite the economic slowdown since the COVID-19 outbreak. Outstanding loans by banks for house purchase totaled over €1.6 trillion, the equivalent of 53 percent of total loans to domestic enterprises and households. Of this amount, 28 percent were granted to corporates, and 72 percent to households and non-profits. Housing loan growth reached 7.3 percent year-on-year in August 2021—the highest growth in about 2 decades—and lending has been accelerating for most of the last decade (Figure 1).

[43] Price-to-rent deviations are a somewhat less useful indicator for Germany compared to some other jurisdictions on account of widespread rent controls.

[44] For details, see (Deutsche Bundesbank, 2020b).

Lending Standards and Data Gaps

53. The picture on residential real estate lending standards is mixed. In the absence of comprehensive and consistent statistics on loan characteristics (see below), the authorities have relied on irregular surveys and private data sources to gain insights into RRE lending practices. Information is variously available on LTV and LTI (or DTI) ratios, according to the specific source. Two special surveys conducted by the Bundesbank and BaFin and the ECB in 2019 which covered the whole German banking system revealed that average LTV ratios increased from 82 percent in 2016 to 84 percent in 2018. Information from Interhyp (a private brokerage firm owned by ING bank) and vdpResearch (the market research company for the German Pfandbrief banks) indicated similar trends. A credit underwriting data collection exercise by the ECB in 2019 (covering German Significant Institutions, SIs, or a third of the German RRE market) found that new lending with an LTV ratio above 80 percent and an LTI ratio above 5 times had grown by 2 and 7 percentage points (respectively) between 2016 and 2018 (Lang, Pirovano, Rusnák, & Schwarz, 2020). Interhyp data allow a longer time span to be considered and is more up-to-date (although with narrower coverage). The recent data indicate that the average LTV ratio rose by 4 percentage points between 2016 and 2019, peaking at a little over 82 percent, but fell back in 2020-21.

54. Some data sources indicate riskier lending practices have become more common, others see tighter standards. Of greater concern than trends in average LTV ratios is the relatively high proportion of new mortgage loans granted at LTVs in excess of 100 percent, a threshold that would suggest market exuberance. Sources disagree on the extent of this riskier lending, and on recent trends. Whereas some reports indicate that the proportion of high-LTV loans fell materially during the pandemic, others show no such decline. In general, it is unclear why lenders extend loans at LTVs above 100 percent. Expert opinion suggest that the property transaction taxes and fees are added onto the loan amount, or additional loans for repairs of the property are tagged onto the loan. A fundamental difficulty is that definitions of 'loan' and 'value' are not shared between lenders; for example, some use a market value for the property, others the 'sustainable' value of real estate as collateral (mortgage lending value, *Beleihungswert*).[45] The authorities are well aware of these issues.

55. The authorities have worked towards closing data gaps impeding real estate risk monitoring, most importantly on loan standards. Data gaps for RRE loans were noted above. In 2015, the FSC addressed a recommendation to the federal government to ensure the existence of a legal foundation for the collection of data to be used in macroprudential risk assessment in residential and commercial real estate (RRE and CRE).[46] In 2016, the FSAP recommended making action on this front a priority, and the ESRB addressed a recommendation to its member states' national macroprudential authorities, including that of Germany, to collect a prescribed set of

[45] The German term *Beleihungswert* refers to the assessed collateral value of a property, which may differ materially from the value at which a transaction occurs. In the current environment of rising prices, average discounts in assessed collateral values may be of the order of 10%.

[46] At the time of drafting AFS/2015/1, the collection of loan-level data at the household level under AnaCredit was still considered an option.

standard indicators and breakdowns for RRE.[47] To meet these and other recommendations, the BMF issued the Financial Stability Data Collection Ordinance (FinStabDEV) in February 2021 that authorizes the Bundesbank to request data from commercial lenders (banks, insurance corporations, and capital management companies) on the terms of loans granted to natural persons to build or purchase residential real estate in Germany. Based on the FinStabDEV, the Bundesbank issued a general administrative act in September 2021 that ordered reporting entities to participate in the data collection. This regular data collection will deliver semi-aggregated institution-level information on lending standards using pre-defined distribution buckets that will aid both the assessment of risks in RRE lending, and the calibration of macroprudential tools. Similarly, the assessment of a lender's compliance with BBMs and individual exemption clauses will be made possible, provided by the annual auditors of the banks, insurance corporations, and capital management companies. The authorities expect the first usable information, for 2023Q1, to be available in the latter part of 2023Q2.[48]

Borrower-based Macroprudential Measures

56. Systemic vulnerabilities in the household sector can be mitigated by the deployment of borrower-based macroprudential tools. By strengthening household balance sheets, borrower-based measures (BBMs) can short-circuit the accelerator mechanisms that may otherwise drive two-way feedbacks between credit and house prices (IMF, 2013, p. §33). They include limits on loan-to-value (LTV) ratios, debt service-to-income (DSTI) ratios, debt-to-income (DTI) ratios, and amortization requirements and maturity limits (for interest-only loans). Such tools have been adopted in a number of OECD jurisdictions over the past decade, including Israel, New Zealand, and the United Kingdom (Annex I, Table 4). The Republic of Korea has experience with such measures going back two decades. However, there is no standard recipe: The precise manner in which BBMs have been implemented varies materially by jurisdiction. This variation reflects differences in the underlying structure of housing markets and housing finance systems. In the EU, BBMs are not (yet) part of the standard macroprudential toolkit, although they have been implemented as a national measure in a number of EU countries (including for example Austria, Czech Republic, Estonia, France, Ireland, Malta, and Romania).

57. Germany has introduced the legal basis for a small set of borrower-based measures, with others to come, but has yet to activate them. Following a 2015 recommendation by the FSC to the federal government, the legislator amended the KWG and related acts applying to other commercial lenders to permit caps on LTV ratios and to set repayment requirements (Federal Law Gazette, 2017).[49] The cap on the LTV ratio applies to the sum of all debt relating to a residential

[47] In the ESRB's 2020 compliance report, Germany was rated 'largely compliant' with its recommendation on data collection for RRE exposures.

[48] At the start of the obligatory data collection in 2023, lenders have been requested to report data for former years on a best-effort basis (non-obligatory), which would aid the assessment of changes over time.

[49] See Part A of AFS/2015/1; note that Part B of the same recommendation deals with data requirements.

property financing transaction (Deutsche Bundesbank, 2017, p. 54).[50] A statutory order (WoImmoDarIRV) was issued in February, 2021, setting out technical details concerning the operation of the tools, including by defining the legal meaning of terms such as 'loan' and 'value', and processes for the activation and subsequent review of the tools. Legislators chose not to implement the FSC's recommendation on DSTI and DTI ratios ('income-based' instruments) in 2017. The present federal government has committed to introduce these tools, and the process to do so is underway. Until then, the only readily-available and legally-binding measure remains the LTV cap. (Although activation of the amortization/maximum maturity requirement could cool loan demand, it is most effective when used in tandem with income-based limits because its use in isolation might otherwise invite undesirable upward pressure on debt service ratios). The authorities have signaled they may use an LTV cap in the event of a slippage in lending standards (FSC, 2021). An internal assessment of lending standards is part of the quarterly risk assessment conducted prior to meetings of the FSC.

58. The authorities' current appetite for activating an LTV cap is blunted by data worries. As the foregoing section made clear, extant data gaps on real estate lending standards will take time to close. This is a problem for the activation of BBMs for several reasons. First, the clear staff view among the responsible authorities is that the improvements (declines) in *average* LTV ratios seen since 2019 are a contra-indicator. Second, activation of the LTV cap requires a number of ancillary variables to be set, including the "free quota" or "speed limit", as well as various thresholds (KWG, §48(u), para. 3). In the absence of sufficiently granular data, there are risks of mis-calibrating the measure, which would have undesired and deleterious reputational consequences. Third, in the absence of a standardized definition of the LTV, applied consistently across diverse credit institutions, the practical effect that a limit might have is difficult to judge.[51] Undesired distortions to competitiveness in the market might also result. In view of these aspects, the authorities averred that they are looking forward to the more comprehensive data from the new data collection starting in 2023 allowing them to make better-informed decisions, rather than deciding under partial information.

59. The ESRB has recently recommended the activation of the LTV cap. In the course of the FSAP mission, the ESRB issued a recommendation to Germany that a legally-binding limit be applied to the LTV ratio (ESRB/2021/10, Recommendation A), and to either the DTI or DSTI ratio following their introduction (Recommendations C and D(2)).[52] Recognizing the legal constraints mentioned above, the recommendation states that if a 'hard' limit (one that is legally-binding on lenders) is not possible, then non-binding measures should be introduced. The timescale for responding to the recommendations stretches beyond the likely date for FinStabDEV data to become available. The authorities will "comply or explain" to the ESRB, and in due course the ESRB will issue an assessment

[50] It is common for private households in Germany to finance the acquisition of property with loans from several lenders. The denominator of the LTV ratio would be the market value of the residential property concerned.

[51] German institutions use two definitions of LTV ratios: loan-to-market value and loan-to-collateral value, with some 10-15 percent difference between the ratios with these definitions.

[52] An earlier ESRB warning had been issued to Germany on medium-term vulnerabilities in the residential real estate sector (ESRB/2019/11).

on that basis. The FSAP's recommendations (Part III.E) complement those of the ESRB; certain short-term actions are recommended, and we also address legal constraints directly.

Sectoral Systemic Risk Buffer

60. A revamped systemic risk buffer offers a flexible and targeted capital tool. The SyRB is a tool unique to the EU regulatory framework. Before 2022, Germany had not made use of the SyRB. Activating the tool had been somewhat complex, being restricted to "long term non-cyclical" risks, and the rules meant that there were interactions with the G-SII and O-SII buffers. However, changes to the SyRB were introduced in CRD V as part of the 'banking package' in Europe, and transposed to German law in the Risk Reduction Act (*Risikoreduzierungsgesetz*) in 2019 (Deutsche Bundesbank, 2019). A useful feature of the new rules is the ability to set buffers that apply to domestic sectoral exposures, to households and firms and in particular on residential and commercial real estate, if the risk is not already covered by other buffers. Because the SyRB can be targeted, including to particular banks and groups of banks, it can avoid some of the costs associated with the CCyB. Furthermore, the buffer can be applied quickly when need arises; there is no mandatory notification period as with the CCyB. Compared with other capital tools, including the CCyB and CRR risk weight adjustments, BaFin has considerable discretion in applying the buffer. One constraint is the need to seek authorization from the EU Commission in cases where the combination of the SyRB buffer level with other buffer exceeds a 5 percent threshold.[53] But the Solvency Regulation (SolvV) does not anticipate in detail how the buffer is to be set, consistent with the potentially broad scope of its application. The flexibility of the SyRB suggests that it is likely to be an important element of the macroprudential toolkit in future.

61. Germany has applied a sectoral buffer to mortgages secured by residential real estate. The EBA has issued guidelines on the use of the sectoral SyRB (EBA/GL/2020/13). They permit some granularity in the application of the buffer, including by exposure and geography. It would be possible in principle to focus the buffer on, for example, residential real estate exposures carrying high LTV ratios at origination, or secured by property in a region with a high level of over-valuation. However, a crucial test remains that a subset of exposures so identified remain systemic, and the authorities have doubts that this would be the case. It is also notable that, given the ongoing lack of consistent data on lending standards including LTV ratios, differentiation by risk profile would be challenging. In light of such considerations, the authorities chose to set the buffer on the broadest category of sectoral exposure under EBA guidelines, namely mortgages secured by residential real estate located in Germany.[54]

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[53] The level of the SyRB, G-SII, and O-SII buffers are simply summed for this purpose, no account being taken for the size of exposures to which the SyRB applies.

[54] See 'General Administrative Act ordering a capital buffer for systemic risks under section 10e of the KWG', BaFin (March 30, 2022). Available at: https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Aufsichtsrecht/Verfuegung/vf_220331_allgvfg_systemrisikopuffer_en.html.

62. The SyRB level has been calibrated using a mortgage market stress test. The approach is top-down, and follows a published methodology (Barasinska, Haenle, Koban, & Schmidt, 2019). In that published exercise, exposure to high LTV loans was a contributing factor for bank losses. Taking account of the risks already covered by the CCyB, set at 0.75 percent, the authorities deemed a SSyRB buffer rate of 2 percent to be sufficient. It should be noted that the FSAP solvency stress tests report that the pick-up in loss rates on banks' household lending portfolios, which are mainly mortgage loans, would be small in the adverse scenario, and likely within or very close to the range at which the SSyRB has been set (see FSAP Technical Note on Stress Testing, Interconnectedness, and Risk Analysis for details).

Other Real Estate-Related Policy Measures

63. There are limits to the ability of macroprudential policies to contain risks emanating from residential real estate markets. Although the purpose of macroprudential measure is not to moderate price increases, they may do so in the short run (Jung & Lee, 2017). But more importantly, by acting to stabilize the availability of credit over the cycle, MPMs may help to reduce downside risks to prices (Deghi, Katagiri, Shahid, & Valckx, 2020). Over longer periods, though, the effect exerted by other drivers of structural and institutional change, especially the government's overall housing policy, is likely to matter as much as financing conditions for stability in the housing market. This observation has led some to advocate greater engagement on the financial stability consequences of government policies that exacerbate supply constraints from macroprudential policy bodies such as the UK's Financial Policy Committee (Brener, 2020, pp. pp. 183-4).

64. Fiscal measures affect the stability of housing markets, and can contribute to reducing systemic risk. Rates of property (or land) taxation are likely to have substantial effects on equilibrium property values via their impact on user cost (whether owner occupied or rented). A taxation regime that maintains a close link to market values, with payments rising in times of rising prices and vice versa, tends to contribute to stability in the housing market; but it would also reduce property owners' net cash flows, and moderate feedbacks from real estate prices to consumption too (Muellbauer, 2005). But their use as a macroprudential tool naturally requires careful consideration: Tax policies bite precisely because they distort markets along dimensions including price, volume, and transaction timing. Moreover, they have implications for housing access and other social policy goals, beyond their function in macroeconomic stabilization. In Germany, the authorities have not used fiscal measures as a macroprudential tool, as has been seen in some jurisdictions (Annex I, Table 4).[55]

[55] For example, fiscal measures have been deployed for macroprudential purposes to reduce demand from foreign buyers (IMF, 2014b). Differential taxation of main and secondary dwellings has also been used in some jurisdictions (e.g. New Zealand).

65. Changes in transaction taxes can have powerful effects on housing markets. Transaction taxes vary across German *Länder*, and can be as high as 6.5 percent.[56] Past changes in transfer tax rates have been shown to have very large effects on housing transaction volumes in Germany (Fritzsche & Vandrei, 2019). They have also been found to impact mortgage lending by banks, demonstrating potential direct implications for financial stability (Koetter, Marek, & Mavropoulos, 2021). In the UK, temporary reductions in property transfer taxes ("stamp duty") have been used as a countercyclical measure following shocks to the housing market. Such a policy was employed in response to the COVID-19 pandemic, and also during the global financial crisis in 2008-09. In the latter event, the measure was found to have provided a net boost to transaction volumes, even after it was reversed (Best & Kleven, 2018). However, the decentralized manner in which property transaction taxes are set in Germany, as well as their effects on state government revenues, makes it hard to envisage temporary changes—in either direction—to counter the materialization of risks.

66. Current reforms to property taxes are unlikely to materially affect housing risks. Germany has a low burden of property taxation, but amongst OECD members, one of the higher marginal effective tax rates for owner-occupied and debt-financed housing investments—similar to New Zealand, and far above Sweden and the Netherlands (OECD, 2021). Importantly for example, German tax law does not favor debt through mortgage interest tax relief for owner-occupiers. A reformed system of property taxation will apply in Germany starting in January 2025. Properties are being revalued for tax purposes for the first time in decades, which will lead to some shifts in the relative burden of taxes between households.[57] The reform is intended to be revenue neutral at the level of individual municipalities. Effects on aggregate prices are therefore likely to be limited. Effects on regional prices are also likely to be limited, for the same reason (municipalities are smaller geographic entities than districts or *Länder*). The new system will therefore contribute little to resolving regional imbalances (which was not an objective of the reform, but may have been a side-effect). Further, taxes will be based on a property appraisal value. If tax appraisals are infrequent, or fail to track transaction prices over time, the unfortunate effect will be that adjustments to effective tax rates become lumpy and unpredictable, and may decline over time.[58] By contrast, taxes could have a notable countercyclical effect were appraisals to be updated regularly to reflect market conditions.

[56] Transaction tax rates are one of the few that can be set by the *Länder*. Other transaction costs include fees due to the notary and the realtor (agent), charges for legal services, and registration fees. Together, these amount to roughly half the overall cost, with taxes making up the remainder (Fritzsche & Vandrei, 2019).

[57] Germany's Federal Constitutional Court ruled the previous system unconstitutional in 2018. Under that system, land in the former West Germany carried a ratable value dating from 1964, while in the former German Democratic Republic values were based on 1935 census figures where these were available.

[58] For example, the Danish authorities have recently highlighted the destabilizing effect of a 2001 property tax freeze, which has led effective tax rates to be lowest around municipalities experiencing the highest rates of increase in real estate prices (Danmarks Nationalbank, 2021).

Assessment on Residential Real Estate

67. There are clear risks to delaying action. The legislative processes needed to implement in full past recommendations to augment the set of borrower-based macroprudential tools and to close data gaps in residential real estate have proceeded exceptionally slowly. The Fund advocated a preemptive activation to damp housing market risks already in 2018 (IMF, 2018c, §41). The view of the authorities at the time was that action on RRE risks was unnecessary: legal obstacles, the localized nature of real estate over-valuations, lack of substantial credit growth, and absence of deteriorating lending standards were all cited (IMF, 2018c, §42). But subsequently the over-valuations became broad-based, real estate loan growth accelerated from 4 percent in 2016-17 to 7 percent in 2021, and new data indicated that the share of mortgages carrying an LTV ratio above 100 percent had increased. Early activation of the LTV cap (assuming that had been feasible) could have mitigated some of the attendant risks.

68. Measures to curb the development of pockets of vulnerable households are needed. Our assessment is that although the household sector is strong overall, the aggregate picture may mask vulnerabilities and that there is considerable uncertainty. First, the indebtedness of German households is low in comparison to OECD peers. However, the comparatively lower rates of home ownership must be taken into account when assessing the aggregate picture. Second, relatively long fixation periods on new mortgages mitigate the impact of rising interest rates, brought on by above-target inflation. But as rates rise some exiting mortgagors will face rising interest burdens as fixation periods on past loans roll off. Demand from new borrowers and from investors is also likely to be crimped, with knock-on effects to the rest of the housing market. Third, as a group, German households that own a property hold more wealth than do non-property owners. But it is also the case that mortgagors with substantial illiquid housing wealth, but limited reserves of liquid assets, react more procyclically to changes in income than other households (Kaplan, Giovanni, & Weidner, 2014). Finally, given price and lending trends, and some (albeit patchy) evidence on high LTV and LTI lending, there is a higher-than-usual likelihood that some households are stretching their balance sheets in order to purchase residential property. And higher rates may well result in upward pressure on DSTI ratios for new loans. Placing limits on lending practices that allow risks to build on the balance sheets of some households sooner rather than later is desirable.

69. The Financial Stability Committee should continue to watch developments in government housing policy closely. If federal or regional governments pursue housing policies with adverse financial stability implications, the Committee could consider saying so publicly. This would appear to be one of the few use cases for a formal warning (see Part II.E). Spillovers from housing policy can take many forms. For example, rent controls that encourage tenants to hold onto cheaper accommodation have implications for neighboring markets, as was seen in the Berlin area in 2020. Or one could envisage a hypothetical scenario in which updates to property valuations by tax officials are inaccurate or tardy and contribute to regional price imbalances. There appears to be limited connections between Germany's housing-related fiscal and social policy on one hand, and its macroprudential policy on the other. Yet each has implications for the other.

C. Corporate Sector and Commercial Real Estate Vulnerabilities

Non-financial Corporations

70. German non-financial corporations have reduced debt and their reliance on bank lending in the past decade. These trends were particularly marked in the SME sector. At the end of 2020, equity to total asset ratios stood above 25 percent for both SMEs and large corporates. Bank debt made up a little under one third of SME debt, and just a seventh of the debt of larger firms. The pandemic and associated public health measures led to contractions in revenues, with sectors such as air transport, amusement and recreation, and hotels and restaurants being hard hit. But the financial strength of corporations going into the pandemic, in combination with the federal government's comprehensive pandemic support measures, prevented a sharp rise in losses on banks' loans to corporates. Easy financial conditions meant that NFCs could use the proceeds of debt financing to bolster their cash positions, and to lengthen the maturity of their debt on favorable terms. The available data indicates that corporate sector balance sheets remained strong through 2020.[59] The Russia-Ukraine war may have implications for some German corporates, but at the time of writing little information is available.

71. The Bundesbank undertakes extensive risk monitoring for non-financial corporations. Staff from banking supervision, economics, and financial stability units are all involved. Staff complement information from published financial accounts using survey data (the Bundesbank Online Panel Firms) and AnaCredit, a credit register run by the ECB, both of which are available on a timely basis. The online panel provides extensive qualitative insights into firms' expectations and funding conditions, on the impact of public health measures, and on the state of customer demand. Meanwhile AnaCredit has brought new quantitative insights into banks' exposures to NFCs, including the sectoral distribution of loans. For example, Bundesbank estimates based on AnaCredit data suggest that less than 5 percent of bank loans were to sectors most impacted by the pandemic. Monthly data from AnaCredit is available on a reliable basis from September 2019 onwards. Staff produce forecasts for corporate insolvencies, and these were influential at the onset of the pandemic when there were fears of widespread business failures (Deutsche Bundesbank, 2020a).[60] In addition, the Bundesbank runs an In-house Credit Assessment System (ICAS) to provide an independent credit rating for around 26,000 NFCs a year. The purpose of ICAS is to rate collateral for use in monetary policy operations, but given the large sample is also of use in macroprudential policy. Overall then, oversight of the NFC sector is strong, and the authorities devote considerable resources to monitoring.

72. Allocation risk is currently a prominent concern for the authorities. The FSAP solvency stress tests foresee modest increases of at most 0.07 percent in loan loss rates on banks' NFC

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[59] Financials for SMEs are available only once a year, with a lag. The Bundesbank makes use of two databases, JANIS and Ustan, which are panels of NFC financial statements available from 1997 and 1987 (respectively).

[60] One of the pandemic-era measures was a suspension in the requirement to file for insolvency. It was first instituted in March 2020, and extended a number of times with finer targeting to pandemic-impacted businesses as time went on. The last wave ended with April 2021.

portfolios in an adverse scenario (see FSAP Technical Note on Stress Testing, Interconnectedness, and Risk Analysis). Losses of this order would be easily absorbed by existing capital buffers. That said, analysis by the Bundesbank suggests that the distribution of losses across banks is likely to be affected by *allocation risk* (Deutsche Bundesbank, 2021). Allocation risk arises from the composition of banks' NFC loan portfolios. It is elevated when portfolios tilt towards borrowers that are riskier than average (without implying that *absolute* risk has necessarily reached a troubling level, although that is possible). For the purposes of this work, 'risk' is measured by a number of possible factors, including the debt overhang ratio, the interest coverage ratio, and the cash ratio (Bednarek, 2021). In scenarios considered by the Bundesbank, firms that start out as relatively riskier on these measures also show much greater sensitivity to stressors such as a sharp rise in interest rates. The trends towards greater allocation risk for banks may, in part, be the flip-side of the favorable aggregate trends noted above; with the stronger firms able to pay down bank debt and tap capital markets, banks are left with the tail of 'high agency cost' borrowers.[61]

Commercial Real Estate

73. The COVID-19 pandemic resulted in divergent dynamics within commercial real estate markets (**Figure 1**). In contrast to the situation in the RRE market, where prices continued to increase robustly during the COVID-19 pandemic, CRE prices declined on average by 0.8 percent in 2021 (versus an increase of 6.4 percent in 2019). However, there was significant heterogeneity in price developments among the different categories of commercial property: After declining in 2021H1, average office prices grew by 0.2 percent in 2021 (versus 9.6 percent in 2019); Retail property prices (largely non-food) fell by -3.1 percent in 2021, continuing the trend seen since late 2018. Property for non-food retail has been deeply affected by competition with e-commerce, which accelerated during the COVID-19 pandemic.

74. The banking system's absolute exposure to commercial real estate sectors is sizeable. German banks are the most exposed to commercial real estate lending among European peers, consistent with Germany having the largest economy and largest population in the EU, and one of its largest banking systems. As of 2021Q3, German banks held 28 percent of the total €1.7 trillion in exposures to non-financial corporations (NFCs) for real estate activities in the EU, leading France (24 percent) and Sweden (10 percent of EU lending to NFCs for real estate activities). German banks also held about 12 percent of the total EU lending to NFCs for construction, fourth after France (23 percent), Italy (18 percent), and Spain (16 percent).[62] Among German IRB banks, 33 and 2.6 percent respectively of the total NFC loans were granted for real estate activities and construction (2021Q3), which was among the highest in the EU.[63] Exposures to sectors including construction, housing corporations, and other real estate activities constituted about 6 percent of assets, 19 percent of

[61] A notable exception to the trend in allocation risk is seen in the default probabilities reported by IRB banks. In that instance, banks may be underestimating risk, or alternatively may have additional expert information that is reflected in their assessments.

[62] Estimates based on ECB's consolidated banking statistics for domestic banking groups and stand-alone banks.

[63] Quoted data are drawn from the EBA dashboard.

total loans to enterprises and households, or 17 percent of GDP. Growth in lending to CRE sectors remained strong in 2021Q3, but slowed marginally to 6.4 percent year-on-year after peaking at 8 percent at the end of 2018, also a 2-decade high. As of end-2020, more than half of total CRE loans were granted for office buildings, followed by commercial buildings (about a third), and industrial buildings.[64] However, rates of non-performance amongst commercial real estate loans have so far remained low, in spite of the pandemic.

75. In the absence of comprehensive data on banks' exposures to CRE sub-sectors, aggregate proxies from private data sources have been used so far. Until now, absent detailed information on bank exposure to different CRE sub-segments, such as office, hotel, industrial properties, the authorities reportedly have relied on data provided by vdpResearch. These data, however, are released with a lag, and publication is infrequent. Monitoring of risks in institutions with the largest exposures is also done by the banking supervision department of BaFin. The rollout of AnaCredit data, however, should provide the more granular information on banks' exposures to the CRE market required for risk analysis.

Assessment on Non-financial Corporates

76. Direct risks from the non-financial corporate sector appear manageable for banks. The results of the FSAP's solvency stress test, and the Bundesbank's own analysis, suggest that the banking system would be able to absorb direct losses from corporate exposures even in a severe stress. But as noted above, the bulk of funding for German NFCs is via capital markets. Although high yield and leveraged loan issuance is low for Germany relative to the rest of the euro area, there are signs of overvaluation compared to long-run averages. Some high yield issuers were even able to place bonds at negative rates in 2021. The responsiveness of NFC bonds to shifts in the government yield curve, along with implications for market liquidity and the behavior of funds, requires further attention. The relevance of this work stems from the considerable exposures that investment funds, insurers, and other NBFIs have to corporate bonds.

77. The current macroprudential framework has few targeted macroprudential tools that may be directed towards mitigating risks from the corporate sector. The option to set a large exposure limit, as with the French measure of 2019, is unlikely to be relevant in the case of Germany which does not have the same preponderance of large indebted corporates. In all cases, activation of current provisions (under CRR Art. 458, for example) would require the authorities to demonstrate that often complex requirements are met, and reciprocation is not assured. Neither is there an immediate prospect that a borrower-based tool could be readily designed, given the diversity of financing arrangements that are involved, issues with the regulatory perimeter, and the lack of any prior experience. The remaining option is an SSyRB, activation of which needs to balance the desire to target sub-sets of exposures to build resilience against specific risks with the need that such sub-sets actually be systemically relevant. These conditions may be difficult to meet for conceivable

[64] Quoted data are drawn from vdpResearch; see: https://www.pfandbrief.de/site/en/vdp/real_estate/financing_and_market/commercial_properties.html

corporate sector risks in Germany, with the possible exception of some categories of commercial real estate exposure.

78. Investment funds and insurers are quite exposed to corporate bonds. The FSAP has found that insurance companies—especially in the life business where exposures to bonds amount to 20 percent of total assets—face material risks from downgrades to bonds. Downgrades negatively affect both insurers' own funds and their capital requirements (see FSAP Technical Note on Insurance Regulation and Supervision).[65] Insurers in turn have exposures to investment funds, amounting to 30 percent of total assets. The FSAP has not addressed the risks that might arise amongst investment funds from their exposures to the capital market instruments of German NFCs. The material interconnections found between investment funds on one hand, and savings banks and credit cooperatives on the other, mean the potential for an indirect effect on banks cannot be ruled out (see FSAP Technical Note on Stress Testing, Interconnectedness, and Risk Analysis). Meanwhile, development of macroprudential tools for NBFIs remains a work in progress.[66]

D. Systemically-Important Institutions

79. Systemically important institutions are required to hold more loss-absorbing capital. By virtue of their size, economic importance, interconnectedness, and other characteristics stemming from their business models, certain financial institutions can pose a greater threat to the stability of the financial system than others. If a systemically important institution (SII) were to collapse, other financial firms could suffer cascading impacts on their liquidity and solvency (IMF, 2014b, p. §177). Because of this, SIIs may be considered too systemically important ('too big') to fail, a perception that distorts the incentives of both the institution in question and its creditors. Under EU legislation (CRD Art. 131), two tools exist to bolster the capital buffers of SIIs: the G-SII buffer applies to institutions that have global systemic importance, as judged using the framework set out by the BCBS;[67] and the O-SII buffer that applies to 'other' institutions judged to have systemic relevance for the economy of the EU or a member state, as judged using EBA guidelines.

80. Germany is home to the largest number of systemically important institutions in the EU. As of 2022, fourteen institutions were designated as O-SIIs. These include Deutsche Bank, Commerzbank, UniCredit Bank, DZ Bank (the central institution of the network of cooperative banks or *Genossenschaftsbanken*), a number of *Landesbanken* (central institutions of the network of savings banks or *Sparkassen*), and others.[68] At the time of writing, O-SII requirements range from 0.25

[65] Quoted percentages for insurers are in terms of total assets on a Solvency II basis as of end 2020.

[66] For an overview of the risks emanating from NBFIs, and the tools to deal with them, see (Garcia Pascual, Singh, & Surti, 2021).

[67] The CRD makes provision for systemic 'institutions', encompassing banks and investment firms, whereas the BCBS framework applies to banks. The G-SII designation is not to be confused with the FSB's concept of a 'global systemically important insurer', which carries the same acronym.

[68] Note that being an O-SII relates to systemic importance whereas being designated as a "significant institution" (SI) relates to direct supervision of the ECB under the SSM. Not all German O-SIIs are SIs because they are subsidiaries of a significant group elsewhere in the banking union (for example, ING-DiBa AG and UniCredit AG). Conversely, not all

(continued)

percent to 2 percent of RWAs in Germany. All the institutions so designated are banks. Under the recent banking package, the rules on the O-SII buffer have been revised so as to remove the previous 2 percent cap on the buffer rate, and the overlaps that existed with the SyRB have been eliminated (Deutsche Bundesbank, 2019).[69] BaFin has modified buckets and thresholds for the O-SII buffer, which will range from 0 percent to 3 percent of RWAs. Germany's only G-SII is Deutsche Bank. Institutions designated as G-SIIs are assigned to one of five subcategories, to determine the additional capital required. In its most recent assessment, BaFin placed Deutsche Bank in the second-to-lowest subcategory in accordance with the BCBS framework, making the required buffer 1.5 percent of RWAs.

81. An unusual feature of the German banking system is the existence of large institutional protection schemes (IPS). An IPS is a 'contractual or statutory liability arrangement which protects those institutions and in particular ensures their liquidity and solvency to avoid bankruptcy where necessary' (CRR, Art. 113(7)). In simple terms, the IPS is a mutual support arrangement linking institutions that are deemed operationally independent, meaning that they are separately supervised rather than being supervised as part of a banking group. Membership of an IPS brings certain regulatory advantages (see FSAP Technical Note on Recovery and Resolution, Box 2, for further details).[70] Germany has two large IPSs: the saving bank group (*Sparkassen-Finanzgruppe*), which includes local savings banks, *Landesbanken*, regional building societies, insurance companies, and other financial service providers; and the cooperative banking group, which covers a little under 800 independent credit unions and the DZ Bank group.

82. Membership of an IPS has implications for how the systemic importance of a group of institutions could be judged. On one hand, the mutual support provided by the IPS makes the failure of an individual institution less likely and more manageable; on the other hand, where IPS members face correlated risks, the systemic risk posed by the IPS as a whole 'is akin to that of bank as large as the combination of all the IPS members' (Lehmann & Veron, 2021). Close scrutiny of the regulatory and resolution framework for IPSs is then warranted (see FSAP Technical Note on Recovery and Resolution). The existence of sizeable IPSs also has implications for how member institutions, especially large ones, should be scored for the purposes of determining O-SII buffer rates. A hypothetical example may be useful to consider: supposing DZ Bank were to be scored as a consolidated entity along with the set of cooperative banks comprising all members of the *Genossenschaftsbanken* IPS, it would clearly have a larger size and larger economic importance than currently. On the other hand, it is possible that the interconnectedness score of the hypothetical

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SIs are German O-SIIs (for example, Münchener Hypothekenbank). Finally, some banks are O-SIIs but neither SIs nor LSIs, because each EU member state can name entities that are exempt from the CRD/CRR (in this case, policy banks including NRW.BANK and Landwirtschaftliche Rentenbank).

[69] The higher cap has allowed BaFin to better align institutions' scores with their buffer rates and to ensure incentives on banks remain by retaining the flexibility to increase buffers.

[70] Membership of an IPS also brings economic benefits to smaller, less-diversified institutions, that have financial structures which make raising new capital difficult (such as cooperatives). German IPS members also share to varying degrees certain central functions, including liquidity management, marketing and branding, and information technology infrastructure.

consolidated entity would be lower at present, since many of the (measured) connections are within the cooperative banking sector.[71]

Assessment on Systemically Important Institutions

83. Work is needed to better judge the systemic importance of institutional protection schemes. The potential systemic importance of Germany's large IPSs should be assessed further. To investigate, BaFin could consider computing a 'shadow' O-SII score that treats IPS members as a consolidated group, to be compared to the O-SII score for the larger institutions of the banking networks. Analysis to explore the resilience of the IPSs, perhaps in the form of a stress test as has been done in Austria, could be considered (IMF, 2018a, p. §18). Such an exercise would provide valuable information for future work on IPS frameworks, as although the relevant legal framework for IPSs is set at the European level, the German IPSs are by far the most important in the EU.

E. Assessment and Recommendations

Overall Assessment

84. Germany's capacity for systemic risk monitoring is good, and important data gaps should be closed by end 2023. The resources and expertise of the Bundesbank and BaFin are considerable, combining the analytical power and data access of the central bank with qualitative information gain from on-the-ground monitoring and supervisory dialogue. The increasing availability of large data sets, from AnaCredit to EMIR and SFT, along with the Bundesbank's 'House of Microdata' platform will help to close analytical capacity gaps with other institutions, including the ECB. However, the FSAP notes that implementation of certain past recommendations has been exceptionally slow. Recommendations by the FSC and the previous FSAP to close real estate data gaps date from 2015, and the necessary legislation from 2017. The statutory instrument (FinStabDEV) was issued in 2021, and the data will be on stream in 2023. It is to be hoped that in future action to close remaining data gaps will be taken with greater alacrity, as the difficulties brought about as a result of the continuing real estate data gaps are manifest (Deutsche Bundesbank, 2017, p. 56; IMF, 2017, §36).

85. The macroprudential toolkit continues to develop, and once additional borrower-based measures are introduced will compare favorably with peers. The authorities have made use of both the CCyB and the SSyRB, with the latter having been reformed to be more easily activated than in the past (Part III.B). Other measures were introduced as part of the European banking package, including the leverage ratio (LR) and leverage ratio buffer (LRB) to be applied to G-SIIs, and Basel liquidity requirements in the form of the LCR and NSFR (Deutsche Bundesbank, 2019). Germany has also created two instruments directed at risks to borrowers funding the purchase of residential real estate, an LTV limit and a maturity or amortization limit. Two additional instruments, providing for limits on DTI and DSTI, are set to be introduced by the present

[71] The method for computing interconnectedness does not directly account for the obligations IPS members have to each other in the event of a stress event.

government. This undertaking should be completed as soon as practical. The array of instruments at the disposal of the authorities will then be comparable to those of peers in Europe, and indeed the rest of the OECD.

Recommendations

86. Legislated powers over as-yet unused borrower-based instruments in the Banking Act (*Kreditwesengesetz*) and related laws should be enhanced by (i) providing that such instruments can be activated prior to a material deterioration in lending standards, (ii) limiting the scale of exemptions from their scope, and (iii) ensuring that any specific provisions are proportionate to the law's macroprudential objective. The authorities should further ensure that the effectiveness of additional borrower-based macroprudential tools is similarly secured as they are introduced.

- The preemptive imposition of borrower-based limits helps to avoid build-ups of unsustainable leverage amongst households, and to short-circuit procyclical feedbacks between credit and asset prices, thereby acting to complement bank capital-based measures. Binding limits also create benchmarks that help to foster a level playing field amongst industry participants, helping to prevent a potential race to the bottom on standards. Early action is vital in the case of 'flow' measures, like LTV limits and the envisioned DTI and DSTI tools, which affect new lending business only.

- Legally-binding borrower-based limits should be activated as soon as practical, unless a material change of direction in real estate and credit markets is observed, in line with past Fund and ESRB guidance. While current conditions warrant precautionary measures, use of borrower-based measures as a structural tool may also be desirable. However, activation of the tools, including where the envisioned limits are high, and therefore less likely to have an immediate market impact, appears to be difficult. Even as data becomes available in mid-2023, evidence of significant changes in standards that are sufficient to identify a threat to financial stability may take time to emerge, and may remain a hurdle to activation.

- Micro data on household balance sheets from the PHF (*Private Haushalte und ihre Finanzen*, part of the Eurosystem Household Finance and Consumption Survey) has an important complementary role to play for the successful roll-out of policy measures, because it can be used to assess the granular impact of a BBM prior to activation. However, such micro data is available only in widely-spaced waves. The allocation of resources to the development of analytical methods for simulating the effect of borrower-based measures should therefore remain a priority.

- In advancing this recommendation the FSAP takes note of the compliance criteria set down in ESRB/2021/10, which states that the German legal framework should ensure that the authorities "are able to activate all legally-binding borrower-based measures in an effective and preemptive way and are provided with the necessary flexibility in order to design those measures based on the vulnerabilities identified" (Annex, Recommendation C, para. 1(a)).

87. Current guidance on the standards expected for lending in residential real estate markets should be strengthened. The effectiveness of current guidance on lending standards risks being limited both by its lack of specificity and because few effective means are currently available to review lending practices. The FSAP therefore sees a need to sharpen guidance, and make it more easily reviewable by bank supervisors.

- In particular, practices should be discouraged that may materially reduce requirements on borrowers' own funds, such as lending to pay transaction taxes and other costs. Such lending lowers effective down-payments at a time when consistent data on loan-to-value ratios remain unavailable and rapidly-rising prices are likely to stretch borrower balance sheets.

- Given difficulties in establishing the facts on LTV ratios, we see the need for less ambiguous guidance that would help lenders better understand what is expected and why. In particular, lenders may believe that macroprudential concerns relate primarily to credit risk, which remains low. However, a high-LTV or high DSTI loan may be secure from the bank's perspective, but still adversely affect borrower resilience, risking procyclicality down the road. Such logic may not be clear in the dialogue between lenders and microprudential supervisors.

- The specific guidance in this recommendation does not require knowledge of LTV ratios, which is an advantage. However, the effect on lender behavior is unpredictable, and the guidance is not guaranteed to produce the desired result of increasing own-funds requirements on borrowers. Guidance would be more effective if used in combination with an LTV limit.

88. The FSC should initiate the development of a comprehensive approach to communication in support of the activation of borrower-based measures to ensure that all relevant stakeholders are identified, to broaden understanding of the benefits and costs of macroprudential measures, and to ultimately promote their acceptability.

- The lessons learnt in other jurisdictions where borrower-based measures have been employed suggest that a communication track should be carefully planned in parallel with the analytical track, in order that borrower-based measures gain acceptability. This is because first, the real estate ecosystem has numerous stakeholders—investors, homeowner associations, brokers, builders, lenders, and individuals—all of whom should be reached. In Germany, the banks are the primary lenders, and some regional savings banks have close associations with politicians too.

- Second, activation of the measures is relatively complex. As well as the headline calibrations, a speed limit and a number of ancillary thresholds must also be determined, which may have differential impacts on households.

- Third, although Germany has some experience with LTV-type limits, enacted in the *Pfandbrief* (a type of real estate-backed covered bond) sector, BaFin's actual macroprudential tools differ from

existing limits in important respects.[72] In particular, the LTV cap takes into account overall RRE debt financing, an approach that is more encompassing than those generally used at present by lenders in the course of their risk management process, and one which entails additional communication steps.

- A strength of the FSC is its ability to coordinate activity across institutions, and it should take the lead in this case.

[72] See (Financial Stability Committee, 2015, Section 2.1) for discussion of existing regulatory approaches to limiting systemic risks from RRE financing (in German).

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Annex I. Tables and Charts

Table 1. Germany: Prudential Policy Actions in Response to the COVID-19 Pandemic During 2020/21 [1/]	
Countercyclical Capital Buffer	The CCyB rate was reduced to 0 percent as of April 1, 2020, cancelling an increase to 0.25 percent that would have come into force on July 1, 2020. The Federal Financial Supervisory Authority issued a statement in February, 2021, that there were no plans to raise CCyB rate before the end of 2021.
Capital Conservation Buffer	Issued enhanced communication regarding operating temporarily below the level of capital defined by the CCB to banks under the supervision of the Federal Financial Supervisory Authority.
Forward-Looking Provisioning	Issued advice to make use of the transitional arrangements for institutions that prepare their accounts in accordance with IFRS 9.
Dividend Restrictions [2/]	Recommended that banks under the supervision of the Federal Financial Supervisory Authority refrain from making dividend distributions and performing share buy-backs aimed at remunerating shareholders from March 30 through October 1. Distributions permitted on a case-by-case basis thereafter. The Federal Financial Supervisory Authority further advised insurers against share buy-backs, and recommended they give careful consideration before the distribution of dividend payments, profits, and bonuses.
Liquidity	Banks under the supervision of the Federal Financial Supervisory Authority were encouraged to use their liquidity buffers (temporarily operate below the LCR of 100 percent), if necessary.

[1/] For information on measures applied by authorities of the European banking union, see https://www.esrb.europa.eu/home/search/coronavirus/html/index.en.html.
[2/] The IMF considers restrictions on the distribution of profits by financial institutions to be a policy tightening for the purposes of its Macroprudential Policy Survey, but since retaining profits has a salutary effect on regulatory capital buffers such restrictions can support the supply of credit.
Source: IMF Macroprudential Policy Survey, Germany

Table 2. Germany: Soft Powers Exercised by Stand-alone Macroprudential Bodies

Jurisdiction	Soft power
Denmark **Systemic Risk Council (SRC)**	*Observation:* An observation implies that systemic financial risks may be building. Observations need not be addressed to a particular recipient. *Warning:* A warning implies that there are clear indications of the buildup of systemic financial risks that should be considered and mitigated. *Follow-up:* Recipients of a warning must present a report addressing the warning, including whether the warning has moved the recipients to make additional assessments, implement initiatives, or the like.
France **High Council for Financial Stability (HCSF)**	*Opinion:* An opinion or other communication signals potential risks and helps to coordinate behaviors. They help to spread the influence of macroprudential policy beyond the scope of existing prudential tools by helping to anchor expectations, and by giving agents an idea of the authority's "comfort zone", beyond which it could be driven to intervene.
Luxembourg **Systemic Risk Committee (SRC)**	*Opinion:* An opinion can be issued where useful or necessary to realize the intermediate and ultimate objectives of macroprudential policy. The SRC can make these opinions public where relevant. *Warning:* A warnings may be issued when risks to financial stability are considered important, and the SRC can make these warnings public where relevant. *Follow-up:* The SRC may evaluate and follow up on the responses provided by the addressees to any opinion or warning.
Poland **Financial Stability Committee (FSC)**	*Statement:* Issued when sources of systemic risk are identified within the financial system or its environment. Statements are aimed at drawing the attention of market participants to identified potential threats for financial stability. They might be addressed to entities of the financial system or its part, as well as to the member institutions of the FSC, i.e. the Financial Supervision Authority, the Minister of Finance, the Bank Guarantee Fund or Narodowy Bank Polski.
Slovenia **Financial Stability Board, Slovenia (FSBS)**	*Guidance:* Depending on the severity of identified financial stability risks, the FSBS may issue guidance to supervisory authorities in the form of recommendations, warnings, or instructions. *Follow-up:* Where guidance requires it, the supervisory authority addressed in the guidance respond according to the principal of 'comply or explain'.

Sources: IMF Macroprudential Survey and official publications of the national authorities.

Table 3. Germany: Publication of Macroprudential Policy Meeting Records		
Meeting record/minutes published	Annual report/other	None found
AUT#, CHE#, CZE, DNK*, FIN#, FRA*, GBR, ISL, IRL, KOR#, POL*, SWE#, USA#	AUS#, DEU*, EST, FRA*, NOR, SVN*	BEL, CHL*, ESP#, GRC, HUN, JPN#, MEX*, NLD, NZL, PRT, SVK

Notes: Type of macroprudential institution is 'central bank' or 'committee inside the central bank' unless indicated:
* Committee outside the central bank
# Supervisory agency (other than the central bank), Other agency (e.g. finance ministry)

Jurisdictions listed as "None found" have not indicated that a record of policy meetings is published in their response to the IMF Macroprudential Survey, and IMF staff did not find a record at the official website of the relevant authority(s) (noting that jurisdictions may list more than one macroprudential authority). Statements relating only to policy decisions, such as the setting of the countercyclical capital buffer, are not considered as meeting records. Note that an authority may publish both meeting records and annual reports.

Table 4. Germany: Household Sector Macroprudential Tools, Selected OECD Countries

Measures	Germany	Australia	Canada	Finland	France	Israel	Italy	Japan	Korea	New Zealand	Switzerland	United Kingdom	United States
Borrower-Based													
Cap on LTV			✓	✓		✓			✓	✓			
Cap on LTI					✓				✓				
Cap on DSR			✓		✓	✓			✓				
Amortization limit			✓		✓	✓			✓				
Restrict unsec. loans									✓		✓		
Other		✓	✓			✓						✓	
Lender-Based													
Household sector capital requirement	*	✓	✓			✓	✓	✓		✓	✓		
Limit high LTV										✓			
Limit high LTI												✓	
Limit high DSR					✓								
Other limits					✓								
Fiscal Measures			✓		✓					✓			
Memo: 5-year growth in household credit (%)	21	20	25	22	29	32	9	12	42	37	14	16	20

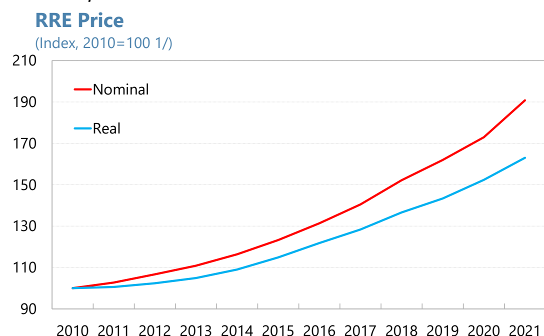
Note: ✓ denotes an active measure; * denotes an announced measure.
Source: IMF Macroprudential Policy Survey and country authorities. BIS *Total Credit to Households*, domestic currency (2016-2021Q3)

Figure 1. Germany: Residential and Commercial Real Estate Price and Credit Dynamics

House prices increased by over 90 percent in nominal and over 60 percent in real terms between 2010-21.

RRE Price

(Index, 2010=100 1/)

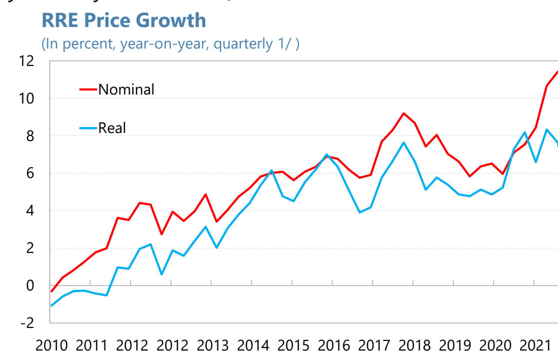


Source: vdpResearch; CEIC; and IMF staff estimates and calculations.
1/ vdpResearch annual estimates of nominal residential prices. Real prices obtained by deflating nominal prices by the CPI.

RRE price growth reached 10.7 percent (5 percent) growth year-on-year in 2021Q4 in nominal (real) terms.

RRE Price Growth

(In percent, year-on-year, quarterly 1/)

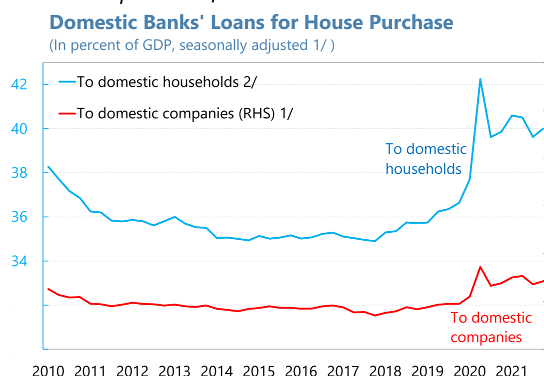


Source: vdpResearch; CEIC; and IMF staff estimates and calculations.
1/ vdpResearch quarterly estimates of nominal residential prices. Real prices obtained by deflating nominal prices by the CPI.

Domestic banks' loans for house purchase constituted about 45.4 percent of GDP at end-2021.

Domestic Banks' Loans for House Purchase

(In percent of GDP, seasonally adjusted 1/)

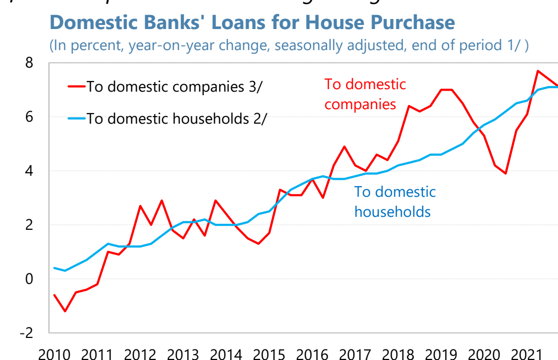


Source: Bundesbank; and IMF staff estimates and calculations.
1/ Excluding self-employed persons and sole traders. 2/ Including self-employed persons and sole traders.

Growth in loans to NFCs slowed in 2020, while bank loans for house purchase continued growing at record levels.

Domestic Banks' Loans for House Purchase

(In percent, year-on-year change, seasonally adjusted, end of period 1/)

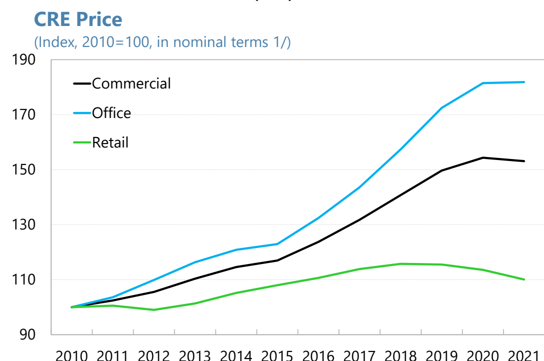


Source: Bundesbank; and IMF staff estimates and calculations.
1/ Data adjusted for statistical changes. 2/ Including self-employed persons and sole traders. 3/ Excluding self-employed persons and sole traders.

While overall CRE prices increased between 2010-21, there is significant heterogeneity withing the sector, especially between office and retail properties

CRE Price

(Index, 2010=100, in nominal terms 1/)

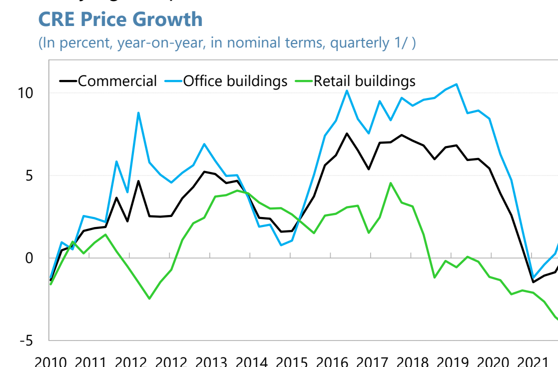


Source: vdpResearch; and IMF staff estimates and calculations.
1/ vdpResearch annual estimates of nominal commercial, office, and retail property prices.

Prices for offices rebounded in 2021, while prices for retail properties continued to decline, largely on account of intensifying competition from online retailers.

CRE Price Growth

(In percent, year-on-year, in nominal terms, quarterly 1/)



Source: vdpResearch; and IMF staff estimates and calculations.
1/ vdpResearch quarterly estimates of nominal commercial, office, and retail properties.